

Biogas is a sleeping giant in a world of loadshedding and landfill airspace shortages

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A perfect storm is brewing



Since 2007, the average standard Eskom tariffs have risen by 307%. South Africans have also been subject to prolonged periods of load shedding. Last year (2021) saw the most substantial periods of load shedding experienced yet, and the forecast doesn't look any better. As of November 2021, load shedding had occurred for 1,136 hours. Continuous tariff hikes, and unpredictable periods of sustained load shedding pose a significant threat to business operations.

Meanwhile, at our landfill sites, another crisis approaches. We're rapidly running out of landfill. As of 23 August 2019, all liquid waste was banned from South African landfills. In the Western Cape, a 50% reduction in organic waste to landfill came into effect at the start of this year, with a 100% ban planned for 2027. There are murmurings of similar bans in other provinces.

In the Digital Global Biogas Corporation (DiBiCoo) Local Stakeholder Workshop of 2021, the South African Biogas Association (Sabia) reports that the South African State Waste Report (2018) estimated that South Africa generated approximately 54.2 million tons of municipal waste in 2017. It further estimated that over 90% was disposed of at landfill sites. You can watch the full workshop session by [clicking here](#).

Biogas is the mixture of gases produced by the breakdown of organic matter in the absence of oxygen (anaerobically), primarily consisting of methane and carbon dioxide. It is produced from raw organic materials such as agricultural waste, manure, municipal waste, plant material, sewage, or food waste.

According to Bloomberg (2021), South Africa is the 12th highest emitter of greenhouse gases (GHG) in the world and the highest emitter in Africa (470 million MtCO₂e).

South Africa selected as emerging market for biogas

South Africa has been identified by its international counterparts as a target region for biogas development and capacity building. South Africa is one of five selected target countries across the world under the EU-funded DiBiCoo Project. As electricity tariffs increase and landfill airspace is under pressure, GreenCape, DiBiCoo's partner in South Africa, is working on integrating viable solutions in the biogas market.

DiBiCoo, a [cooperation project](#) between biogas technology developers and developing market countries, supports the European biogas/biomethane industry by preparing markets for the export of sustainable biogas/biomethane technologies from Europe to developing and emerging markets. The project, which has received funding from the European Union's Horizon 2020 Research and Innovation Programme, has selected two other countries in Africa: Ghana and Ethiopia.

South Africa's National Waste Management Strategy aims to have 40% of biogas produced from organic waste by 2025. Despite this and an increase in demand over the years, biogas, [as a sustainable, cross-sectorial alternative](#), remains a significant opportunity in the country.

"The attractiveness of biogas over conventional fuels and electricity should be embraced as a means to reduce our carbon footprint, introduce further international investment and close collaboration between the public and private sectors," says Jack Radmore, Energy and Finance Programme manager at GreenCape.

Speaking to the topic of mitigating risk in the financing of biogas projects in an [online workshop](#), prominent industry leaders were able to share their thoughts on the sector from both a local and an international perspective.

"Location is critical to the success of any biogas project," says Yaseen Salie (Wisp facilitator and bio-energy analyst, leading the DiBiCoo project for GreenCape). "The further the feedstock, the more service providers are required along the supply chain. As a reasonably new energy source, South Africa still lacks skills, knowledge and experience for widespread adoption, but we can become more efficient over time."

Salie adds: "To fully embrace biogas as a solution, we need to understand its risks and feasibility. Data gathering, market intelligence, feasibility studies and infrastructure need to be considered. With the help of a strong local contingent backed by international counterparts, we can help mitigate risk and provide the support needed."

Financing and Investment

One such international partner is the World Biogas Association. Founded in 2016, it represents approximately 100 agencies and looks to promote the industry, provide analysis and member support, further develop commercial opportunities and knowledge partnerships in the biogas sector.

"In the fight against climate change, we are here to empower the biogas industry to achieve its full potential," explains Tasneem Mayet, the WBA's senior policy manager. "Targets for South Africa, amongst others, include: 1) the reduction of GHG emissions 42% by 2025 and 2) that municipalities can buy electricity from other vendors."

The scope of biogas projects ranges from R2m to R20m (500kW).

Spurred by economic recovery considerations post-Covid-19, "\$588bn of green transition opportunities exist across sectors until 2030. Furthermore, the International Finance Corporation (IFC) awarded Absa with the country's first green loan in May 2021," says Mayet.

Felix Colemorgen, project manager at WIP Renewable Technologies echoes this sentiment, highlighting their objective to "prepare emerging countries from technologies from Europe. We have identified new and emerging markets – South Africa being one of them – and we look to explore and exploit opportunities through close collaboration."

Bernhard Wicek of the Austrian Energy Agency highlights three critical considerations when financing a biogas project, namely: feedstock, finance and technology.

Jack Radmore, energy and green finance programme manager at GreenCape used data to articulate and track the size and scope of projects in South Africa. "To achieve South Africa's set out NDCs by 2030, an annual investment of R596bn needs to be made per annum. As it stands, there is a clear deficit between what is required and what is spent,"

Sources of climate spend still fall largely on the private sector (around 53%). "Majority of this spend sits with the commercial banks followed by institutional investors and venture capital projects."

Steps to uplift and grow the biogas sector in South Africa:

- Improve public-private co-ordination.
- Develop agreed upon definitions for climate finance.
- Increase support for innovative finance tools.
- Clarity and consistency around regulation.
- Develop guidelines and tools to enable reporting, monitoring and evaluation.
- Incorporate environmental impact criteria into private sector investment policies, targets and procedures.

"The attractiveness of biogas over conventional fuels and electricity should be embraced as a means to reduce our carbon footprint, introduce further international investment and close collaboration between the public and private sectors," Radmore concludes.

Further to this, DiBiCoo has recently developed a biogas and gasification digital matchmaking platform. This digital platform facilitates bi-directional partnership and is considered as an additional marketing option for European companies. Join the platform for free by clicking [here](#).

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