



Offsetting



Joburg Waste to Energy Offset Project



As South Africa grapples with an electricity crisis, the Joburg Waste to Energy offset project strives to keep the lights on whilst cleaning up the municipal sites around Johannesburg.

The Challenge

Municipal landfill sites are not only an eyesore, they also pose serious environmental and health hazards by generating huge quantities of methane gas. Landfills are responsible for 4% of South Africa's greenhouse gas emissions, mostly in the form of methane.

Methane gas is produced when organic waste – food, garden waste, street sweepings, textiles, wood and paper – is broken down by bacteria that are naturally present in the waste, as well as in the soil that is used to cover the landfill. As a greenhouse gas that is 21 times more harmful to the environment than carbon dioxide, methane can migrate underground and become explosive.

If managed correctly, methane can be captured and destroyed by flaring it. The Joburg Energy-to-Waste offset project goes a step further by capturing methane from five landfills sites in Johannesburg and turn it into electricity, solving two serious issues that South Africa currently faces. The destruction of this greenhouse gas, which is a major contributor to the climate crisis, assists not only the city but contributes to national climate change mitigation goals.

The Solution

Five municipal landfill sites around Johannesburg have been developed using the latest technology by energy management company Ener-G Systems. After capturing methane gas, the project converts it into electricity via a network of pipes in the landfill. The gas is pumped in a chimney where it is combusted into harmless emissions. This is the project's first phase.

The 5 facilities have an installed capacity of 13MW of renewable energy, which reduces carbon emissions by approximately 459,034 metric tonnes of CO₂e/year – equal to removing more than 153,000 cars from the roads.

The second phase of future development could increase capacity and renewable energy output at three of the active landfill sites. When completed, the project will produce 19MW of electricity – enough to power 16,500 medium-sized houses. This will make it the biggest landfill waste-to-energy project in South Africa.



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Benefits

- The project contributes towards solving South Africa’s electricity crisis by eventually providing power for up to 16000 homes
- Five major landfill sites around Joburg are covered, making them cleaner, safer and reducing the risk of methane explosions
- Increase in employment opportunities as local contractors and labourers were required for construction, as well as long-term staff contracted to operate and maintain the system.

Did you know?

The Certified Emission Reductions (CERs) generated by the Joburg Waste to Energy Project are eligible for use under the South African Carbon Tax, providing companies the opportunity to pay less carbon tax.



Carbon Offsets

This Project is registered under the Clean Development Mechanism (CDM), allowing companies to credibly offset their carbon footprint to make a sustainable environmental impact. The Project is measured and monitored by internal and external researchers and audited by independent auditors as required by the CDM guidelines.



Do you have questions or would like more information? Call us at +27 (0)21 202 6067 or visit to our website:
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