



AFRICA'S WASTE CRISIS IS ATTRACTING THE WRONG SOLUTION

Waste-To-Energy Incineration



Acknowledgements

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GAIA: GAIA is a global network of grassroots groups, non-governmental organisations (NGOs), and individuals, in over 90 countries. The organisation envisions a just, zero waste world built on respect for ecological limits and community rights, where people are free from the burden of toxic pollution, and resources are sustainably conserved, not burned or dumped. GAIA works to catalyse a global shift towards environmental justice by strengthening grassroots social movements that advance solutions to waste and pollution. www.no-burn.org.

Executive Summary

This Report Analysed

15

Waste-to-Energy
Incineration Projects/
Proposals

10

In African Countries

Ranging from one operational plant to a growing number of proposals, feasibility studies, and signed agreements.



Across Africa, cities struggle to manage waste as rapid urbanisation and population growth overwhelm existing waste collection systems. Currently, only 55% of municipal solid waste on the continent is collected, and a mere 4% is recycled.

Open dumping and burning are still widespread, while landslides at the Koshe landfill (in Addis Ababa), the Conakry Landfill (in Guinea), and the Kiteezi landfill in Kampala have tragically resulted in the deaths of over 116, 30 and 21 people, respectively.

As a result, governments are under significant pressure to demonstrate that they are taking action.

In response, municipalities in Africa are often presented with waste-to-energy incineration as a silver-bullet solution (promising to manage waste and provide electricity). However, policy and data analysis reveal that this end-of-pipe technology (waste-to-energy incineration) is fundamentally misaligned with Africa's local waste composition, creates long-term financial lock-ins, emits more greenhouse gases than coal-powered plants, releases a cocktail of noxious substances which are harmful to public health, and diverts funds from cheaper, inclusive, sustainable zero waste solutions.

This report analysed 15 waste-to-energy incineration projects/ proposals in 10 African countries, ranging from one operational plant to a growing number of proposals, feasibility studies, and signed agreements.

The key question this report raises is straightforward: Is Africa effectively addressing its waste crisis, or is it locking municipal budgets into decades of costly, polluting infrastructure that countries in the global north are actively trying to phase out?



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WHY DOES WTE TEMPT AFRICAN GOVERNMENTS?

Based on our understanding, there are two main reasons why African governments are drawn to waste-to-energy (WtE) solutions:

- **The Waste Crisis:** Landfills and open dumpsites across Africa are becoming overwhelmed, placing immense pressure on governments to take decisive action against open dumping, burning, and associated disease outbreaks.
- **The Energy Narrative:** Proponents of waste-to-energy incinerators market them as dual-purpose infrastructure that not only disposes of waste but also generates power. This appeal resonates with many African governments that are already grappling with chronic electricity shortages.

FIVE REASONS AFRICA SHOULD BE WARY OF THIS TEMPTATION

- **Africa's Waste is Unsuitable for Incineration:** In many African cities, municipal waste is predominantly organic, highly moisture-laden, and low in calorific value, with over 62.5% of the solid waste generated in East Africa being organic. This composition suits composting and organic matter recovery better than combustion. When planning waste management infrastructure, decisions should be based on the actual waste composition rather than imported designs that do not align with local waste characteristics. According to data from the World Bank, low-income countries produce 53-56 per cent of both food and organic waste, whereas high-income countries produce about 32 per cent; in the latter, a considerably larger proportion of the waste — around half — consists of dry, recyclable materials such as paper, plastic, metal and glass, which possess high calorific value. High-moisture African waste burns poorly and would often require supplementary fossil fuels to combust, making incineration highly inefficient and expensive as an energy source. The UN Environment Programme's own report reaches the same conclusion, stating that waste incineration is particularly inappropriate for low- and middle-income countries, as it is not only a more expensive method of managing waste but also a more expensive way of generating power than the alternatives available to them.
- **Incinerators Create Long-Term Capital and Waste Lock-In:** Incinerators are large industrial machines that cost hundreds of millions of dollars to construct and take 20 to 30 years to pay off. They depend on a continuous, enormous supply of high-calorific waste to remain financially viable, locking cities into a system that requires massive waste generation. Implementing Waste-to-Energy incineration technologies in Africa would trap cities in this waste management model, undermining policies aimed at reducing, reusing, recycling, and composting materials for a generation (25 to 30 years).
- **Incineration Does Not Eliminate Waste:** Incinerating waste does not make it disappear. Instead, it releases a significant portion as air pollutants—such as nitrogen oxides, heavy metals, and persistent organic pollutants like dioxins and furans—and leaves toxic ash and residues. These byproducts still require safe, long-term disposal. Even the most advanced pollution control devices cannot eliminate these emissions.
- **Threats to Waste Pickers and Recycling Economies:** Incinerators need combustible materials, including the same plastics, paper, and cardboard that informal recyclers collect. This is not hypothetical; waste-picker organisations have already raised concerns that thousands of jobs could be at risk if these projects proceed without effective integration plans. Interviews with waste pickers around the Koshe dumpsite confirmed a 50% decline in earnings due to the Reppie Incinerator, forcing some into street begging.
- **The Opportunity Cost:** Perhaps most importantly, what could be achieved with the same amount of capital invested in incinerators? With hundreds of millions of dollars spent on a single incinerator (and high operational costs), cities could instead fund source-separated collection, composting and organic recovery networks, material recovery facilities, reuse systems, and the formal integration of waste pickers—all at a much lower long-term cost and without the drawbacks of pollution or lock-in. The real choice is not between incineration and dumping, but between incineration and investing in a comprehensive zero waste system.

MAPPING AFRICA'S EMERGING INCINERATION TRAP

Tracking data compiled in 2026 shows a significant increase in Waste-to-Energy incineration proposals in the last five years. 15 projects or proposals were identified across 10 countries: Egypt, Ethiopia, Ghana, Kenya, Morocco, Nigeria, Sierra Leone, South Africa, Uganda, and Zimbabwe. One plant (Reppie, Ethiopia) is currently operational; two are under construction; and the other 12 are at the stage of seeking approval, securing financing, planning or proposing.

These tracked projects account for an estimated cumulative power capacity of 520-550 MW and total capital expenditure exceeding US\$4 billion.



REPPIE WASTE-TO-ENERGY PLANT IN ADDIS ABABA.

SOURCES OF FUNDING OF AFRICAN WASTE-TO-ENERGY INCINERATION PROJECTS AND PROPOSALS: SUMMARY OF FINDINGS

Funding patterns. Our analysis of funding sources for the 15 tracked projects shows that three primary sources fund these projects/proposals. The largest is African public money (Reppie, Casablanca, Abu Khreita and Pomona).

The other two primary sources of foreign funding for waste incineration projects in Africa are from China and the Netherlands. Chinese companies are involved in five of the projects, typically acting as contractors, either providing their own financing or arranging it through a Chinese bank. The Dutch public development finance bodies (Invest International, FMO and Climate Fund Managers) give support to Lagos, Johannesburg and Freetown, and a Dutch-registered company is leading the Pomona waste-to-energy project in Harare.

Also note that a project described as representing '100% private investment' may still shift a considerable amount of economic risk onto the public sector. Pomona provides a clear example of this problem.

Climate finance. At least 2 of the projects in the tracker have verified direct climate-finance involvement, with the share potentially higher once opaque and still-unclosed financing packages are fully traced.

- **Freetown:** development funding from the EU-supported Climate Investor Two fund.

CASE STUDY: PROCUREMENT AND LOCK-IN DEFICITS IN HARARE (THE FOUL DEAL THAT COULD BANKRUPT ZIMBABWE'S CAPITAL)

The Pomona project in Zimbabwe highlights concerns about questionable waste-to-energy incineration projects being proposed in Africa.

- **Bypassed Competitive Bidding:** The Harare City Council granted a 30-year concession, valued between US\$300 million and US\$350 million, to Geogenix BV without a competitive tender process or an independent feasibility study.
- **Opaque Corporate Rebranding:** Geogenix BV changed its name from Integrated Energy BV in 2020 following several scandals in Albania, with its beneficial owner (Mirel Mërtiri) declared wanted internationally in 2023 on charges of corruption for an incineration scandal.
- **Civil Society Challenges:** Various civil society organisations, including the Combined Harare Residents Association, Centre for Alternative Development (CAD), the Zimbabwe Coalition on Debt and Development, and Transparency International Zimbabwe, have challenged the agreement in court, describing it as a mechanism for enabling elite capture.
- **Lock-in and Municipal Liabilities:** Under the contract, the city council pays Geogenix approximately US\$22,000 to US\$40,000 each day to dispose of waste at the Pomona site—a location the council owns and previously managed at no cost. Harare's mayor called this arrangement "atrocious," questioning how a landlord could end up paying rent to its tenant.
- **Corruption on Viagra:** Harare Mayor Jacob Mafume, who was suspended from office at the time the deal was signed in March 2022, stated that "this is corruption which has drunk an energy drink or taken Viagra." There is no way such a deal can be legal," Mafume, an attorney by profession, told the media. "How do we, as a landlord, give someone a lease and we pay the rentals? It would be criminal to do so. "This is corruption which has drunk an energy drink or taken Viagra. This deal is not legal, no one can legally execute it. It's not worth the paper it's written on. It is just not workable in any way, shape or fashion," Mafume added.

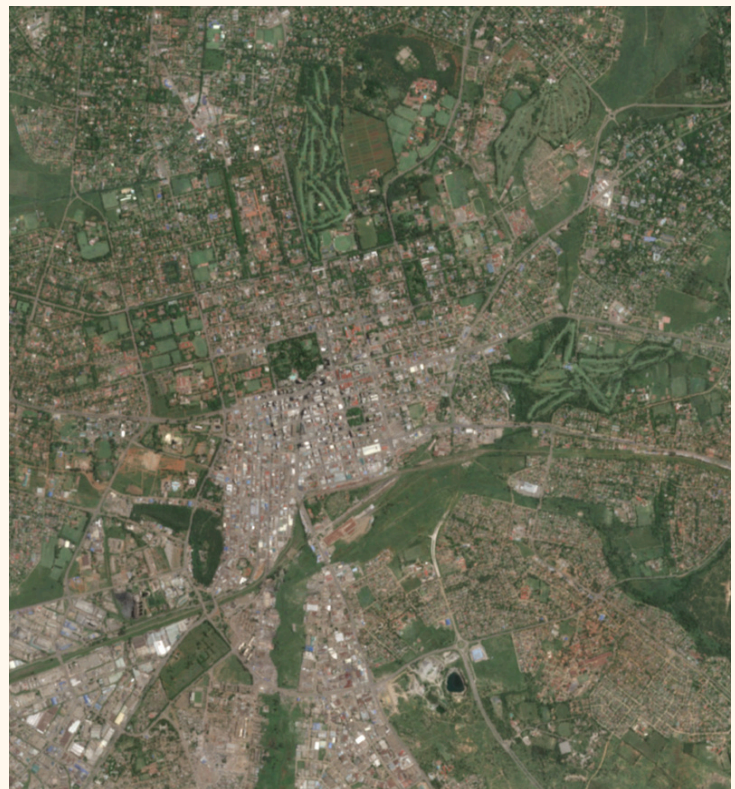


PHOTO STOCK BY TOMAS GRIGER (CANVA PRO) — AERIAL VIEW OF HARARE.

This lack of transparency—characterised by undisclosed contract terms, the suspension of normal procurement rules, and limited opportunities for public participation—is evident in several other projects currently under consideration. This situation supports the report's recommendation to mandate disclosure of financing and feedstock contracts before signing any incineration agreements.



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THE STRATEGIC ALTERNATIVE: ZERO WASTE PATHWAYS

The debate is often presented in black-and-white terms: either keep up open dumping and burning, or move to modern incineration (often called controlled burning).

However, another option exists—a proper path based on waste prevention, source separation, management of organic materials, reuse, and recycling—so that only a small remaining portion of waste needs to be disposed of.

This approach aligns with the African Union's Agenda 2063 waste management objectives, which call for at least 50% of municipal waste to be recycled.

WHAT AFRICAN GOVERNMENTS SHOULD INVEST IN INSTEAD

- *Invest in mandatory source separation of waste:* One of the most effective things that African countries can do to develop sustainable cities, generate employment opportunities, and tackle climate change is to invest in the practice of source separation of waste—that is, separating recyclable materials, organic waste, and general trash at the household level. Since many African municipalities currently follow a "collect and dump" approach, switching to source separation would yield huge environmental and economic benefits.
- *Prioritise organics:* Encourage and invest in composting and Black Soldier Fly Farming, and implement decentralised organic recovery and anaerobic digestion where suitable – since the waste stream in question is often more than 60% organic.
- *Develop recycling infrastructure:* invest in collection, sorting, and material recovery capacity before, not after, disposal infrastructure is put in place, and phase out the production and use of non-recyclable plastics in Africa.
- *Integrate waste pickers:* formalise waste pickers who currently collect, sort, and recycle an estimated 15 to 20 per cent of the waste produced, ensuring they have safe working conditions, are paid fairly, and have the right to organise.
- Strengthen extended producer responsibility and waste-prevention policies by making producers responsible for the end-of-life management of their products. African governments need to transition from voluntary to mandatory EPR schemes.
- Invest in data: before approving billion-dollar infrastructure projects, cities need reliable information on their waste characterisation, the proportion that is recyclable, and the actual amount of waste that will remain after accounting for prevention, reuse, recycling, and composting.

CONCLUSION: A DECISION WITH GENERATIONAL REPERCUSSIONS

In 2018, we warned against the adoption of a waste-to-energy incinerator in Addis; that waste-to-energy incineration should have no place in Africa, and that adopting it would be non-economic; this included the environmental, climate, and public health impacts, which led to the scaling back of support for municipal incinerators in the Global North. Now, eight years on, several project proposals are underway in at least 10 countries, supported by billions of dollars in disclosed investment.

The option before Africa is still available: African governments can lock their cities into contracts lasting between 25 and 30 years, which require a continuous supply of waste that will most likely be burnt openly, or we can choose to invest in prevention, separation, composting, recycling and the integration of waste pickers in a way that matches both the nature of waste on the continent and its development objectives.

Africa does not need to follow the same polluting infrastructure pathways as industrialised countries; it can learn from their mistakes and adopt zero waste solutions that are free of toxins and truly circular.



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POLICY RECOMMENDATIONS



NATIONAL GOVERNMENTS

Place a moratorium on any new agreements involving incineration until independent assessments have been carried out to verify the claims and promises of proponents proposing waste incineration in Africa, with the full inclusion of civil society groups.



NATIONAL REGULATORS

National regulators should require the public disclosure of information on financing, feedstock contracts and environmental impact assessments, in accordance with the transparency rules set out in domestic environmental law and the Basel Convention.



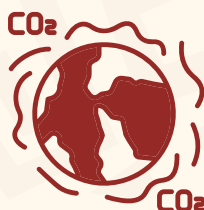
PROTECT WASTE PICKERS

Protect and formally integrate waste pickers before approving any infrastructure that could affect the flows of recyclable materials.



NATIONAL TREASURIES, AFDB & DFIS

Direct financing toward zero waste solutions such as waste prevention, collection, composting, black soldier fly farming, and recycling—not combustion—to meet the African Unions' (AU's) Agenda 2063 50% recycling target.



GLOBAL CLIMATE FINANCE INSTITUTIONS

Global climate finance institutions should never regard waste incineration as climate mitigation or make it eligible for climate finance, just as the European Union (EU) has excluded subsidies for incinerators from its Renewable Energy Directive.

AfDB – African Development Bank | DFIs – Development Finance Institutions | AU – African Union | EU – European Union

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