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Policy Brief

Plugged In, Piling up: The E-waste Reality in Ghana

Executive Summary

Ghana receives about 150,000 tonnes of e-waste annually (legally and illegally), most of which comes from Europe and North America as “used goods” but cannot be repaired once it arrives ¹. Currently, approximately 70,000 tonnes of e-waste is locally generated per annum, with Accra and the Ashanti region alone generating 50,000 tonnes from households. Informal collectors and small aggregators dismantle devices by hand and burn cables to recover metals, releasing toxic chemicals into soil, water and air.

Ghana’s e-waste sector is both a source of livelihoods for thousands of people and a source of pollution. Although Ghana has a comprehensive legal framework to protect the country from the challenges of e-waste management, weak enforcement and limited Environmental Protection Authority (EPA) resources allow illegal imports and burning to persist. Formal recycling facilities remain scarce, customs delays stifle licensed operators, and eco-levy revenues largely fail to reach local programmes. Public awareness on safe disposal remains low, and informal workers lack legal

recognition or basic protective equipment.

The key finding of this research is that around 30,000 - 40,000 people depend on e-waste recycling in Accra’s Agbogbloshie scrapyards - widely considered the world’s largest e-waste dumpsite - with daily incomes ranging from \$1.92 - \$9.62. However, commodity-price volatility (e.g. copper dropping from \$5.77 to \$2.88/kg can halve earnings overnight). Soils at e-waste sites contain extremely high levels of lead, cadmium, antimony and other metals. In one Agbogbloshie/Kumasi comparison, mercury in topsoil ranged up to 7.57 mg/kg (Dagomba) and 4.36 mg/kg (Agbogbloshie), both far above the 0.1 mg/kg safety threshold ².

The EPA must coordinate with customs on rapid border testing, publish real-time waste-flow data (e.g. annual report cards), launch nationwide segregation campaigns and partner with innovators on pilot collection and dismantling centres in the country to reduce the negative impact of e-waste management in Ghana.

Key Messages

- Entire communities are affected by the pollution generated by e-waste. Children grow up sick, rivers are choked with waste and the environment is destroyed.
- The e-waste pollution poses health risks to workers, customers, and nearby residents. This exposure becomes detrimental to the health of waste pickers and communities living and working near dumpsites, fueling respiratory illness, cancer risk, and shortened lifespans.
- Waste pickers, many of them children, are the backbone of the so-called “recycling” system. These workers are burdened with cleaning up a mess they didn’t create. They are often exploited, with no health protection or benefits, and their efforts go largely unrecognised.
- E-waste exporters need to take responsibility for the waste they create. Ghana’s government needs to ensure accurate labeling and proper buyback systems to reduce the e-waste burden on waste pickers and the environment.
- To address these issues, stronger enforcement, improved tracking systems, and international collaboration are needed.



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Background

Electronic waste (e-waste), which includes discarded devices such as computers, phones, and other electronic equipment, has become a global problem. With the high demand of technology in the Global North, large quantities of e-waste are produced each year, and only a small portion is safely recycled. Much of the remaining e-waste is then shipped abroad, often from Europe or North America to Africa, under the guise of “used electronics”. Ghana has become a major destination for these imports.

In recent reports, analysts estimate that approximately 150,000 tonnes of e-waste enter Ghana each year, both through the legal trade in secondhand goods and through illegal routes³. The combination of high import volumes and rudimentary processing has made places like Agbogbloshie, a neighborhood in Accra, notorious for its pollution and health risks.

These e-waste imports continue to circumvent the Basel Convention that regulates the transboundary movement of hazardous waste and the Bamako Convention, a regional agreement which prohibits the import of hazardous waste into Africa. Although Africa generates less e-waste per capita compared to other continents, over 60% of the e-waste in Africa comes from imports⁴. With the push for digitisation e-waste is projected to increase unless strict measures are taken.

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Global E-Waste Trade and Ghana

Global trade in e-waste has expanded rapidly. As recycling capacity in the North remains costly, large volumes of e-waste are exported to developing countries. In Ghanaian ports and markets, the incoming items feed into an informal recycling sector. Workers strip wiring and components that recover metals (especially copper) and then burn or discard the remainder. Due to limited formal facilities, the vast bulk of imported e-waste is handled in this unregulated way.

In 2016, Ghana's Parliament passed the Hazardous and Electronic Waste Control and Management Act (Act 917),

along with accompanying regulations (LI 2250). These set out Ghana's legal framework for e-waste. The law requires that importers and exporters of used electronics register with the Environmental Protection Authority (EPA) and obtain permits. An "eco-levy" is charged on new electronic products designed to fund recycling. In 2025, this regime was further strengthened by Act 1124, which clarified EPA's mandate and tightened compliance requirements. In principle, the law bans dumping of hazardous components and requires environmentally sound recycling. In practice however, enforcement has lagged.

Policies and Institutions Regulating E-Waste Dumping and Protecting Communities

Ghana's policies include international conventions and comprehensive national legislation on e-waste management and public health. The core actors and regulations are:

- **Environmental Protection Authority (EPA) (Act 1124, Part Four):** issues permits for the importation, treatment and disposal of electrical and electronic waste; monitors requirements and notices of compliance; and deals with customs and local authorities.
- **Customs Division, Ghana Revenue Authority (s. 166):** monitors imports, collects the environmental incentive tax on certain electronic equipment (Section 124), and enforces prohibitions on unauthorised movement of e-waste (Section 125).
- **Electrical and Electronic Waste Management Fund (s. 132):** the revenue from the environmental tax is used to finance the establishment of recycling facilities (Article 138), public awareness campaigns and safe disposal programmes.
- **Take-Back Obligations (s. 139):** ensures both the original equipment manufacturer (OEM) and importers set up take-back systems for electronics when they reach their end-of-life.

These provisions work hand-in-hand to ensure proper e-waste management at each stage of its lifecycle. The introduction of eco-levies has ensured the internalisation of recycling costs, hence disincentivising e-waste disposal while the rules that ensure the take-back systems protect community health by mitigating risks of being exposed to heavy metals and other toxic substances.

Strengths and Weaknesses of Current Framework

Strengths

- Act 1124 looks at electronics at every stage from production to disposal, which aligns national law with the Basel and Stockholm Conventions and embeds Extended Producer Responsibility (EPR) principles.
- The e-waste fund (s. 132) makes available a clear and consistent source of revenue to set up needed infrastructure and drive awareness.
- The multi-agency collaboration involving EPA, Customs and the Management Board provides a comprehensive oversight and ensures responsibility is shared.

Weaknesses

- Despite EPA directives, insufficient personnel and inadequate laboratory capacity mean illegal imports and informal burning persist.
- Although recycling facilities are mandatory, few have actually been built or are operational, making informal recycling businesses the default handlers for most e-waste.
- There is too much bureaucracy in issuing permits coupled with inconsistent institutional regulations. This discourages needed investments in the formal recycling space.
- The general public has not been sensitized enough on collection points and fee requirements, leading to poor collection rates.
- Due to enforcement being done in fragments, it creates loopholes and prevents informal collectors from integrating into formal systems.

Addressing these weaknesses requires improving the resources of EPA, streamlining permitting procedures, accelerating the implementation of recycling facilities, and improving public education.

Main Findings

E-Waste Hotspots in Ghana

Ghana's capital, Accra, has long been home to the country's largest e-waste dumps. For years, the Agbogbloshie scrap yard in Accra served as the main informal recycling site. After its initial closure in 2021, many smaller dump sites sprung up across Accra and nearby towns. Other known e-waste hotspots include the Tema-Ashaiman area (near Accra) and Kumasi. Studies have found, for example, that the Dagomba Line area in Kumasi is an emerging e-waste site where soil mercury levels reach 7.6 mg/kg. The Tema-Ashaiman region also hosts long-term recycling dumps: recent soil surveys there show "very highly polluted" levels of lead and copper, with all heavy metals (Pb, Cu, Hg, etc.) above background. In sum, hotspots are clustered around major urban centers:

- Accra (Agbogbloshie and new dumps): one of the world's largest e-waste scrapyards ⁵.
- Tema - Ashaiman: long-used e-scrap sites on Accra's outskirts with heavily contaminated soil.
- Kumasi (Dagomba Line): a recent recycling site; soil mercury there far exceeds safe limits.

Hazardous Contaminants from E-Waste:

Dismantling devices and open burning cables (often with added tires) spew heavy metals and persistent organics into the air and soil. Many unsound practices have been observed at e-waste sites including:

- Scavenging
- Dumping on land or in water bodies
- Landfilling along with regular waste
- Open burning or heating
- Acid baths or acid leaching
- Stripping and shredding plastic coatings
- Manual disassembly of equipment.

These activities are considered hazardous to the environment and health as they release toxic pollutants, contaminating the air, soil, dust, and water at recycling sites and in neighbouring communities. E-waste sites contain extremely high levels of lead, cadmium, antimony and other metals. In a Agbogbloshie/Kumasi comparison, mercury in topsoil ranged up to 7.57 mg/kg (Dagomba) and 4.36 mg/kg (Agbogbloshie), both far above the 0.1 mg/kg safety threshold ⁶. Rainfall then washes these pollutants into nearby water bodies: the Odaw River and Korle Lagoon receive runoff laced with copper, lead, cadmium and PCBs from burning sites.

Impacts on People and Communities

The toxic exposure at these sites has serious health and social consequences. Informal workers (often migrants from poorer regions) manually break and burn e-waste without

any protective gear in most cases. They routinely suffer cuts, burns and chronic respiratory problems from inhaling fumes. Many scavengers are very young. One study noted the average worker age is 21, with children as young as 5 participating. As a result, blood levels for lead, cadmium and other metals are elevated in these populations. Medical reports link this exposure to neurological and developmental harm: for example, children exposed to e-waste chemicals show reduced IQ and behavioral problems ⁷.

Expectant women and infants are especially at risk as e-waste contaminants can cross the placenta and have been correlated with stillbirths and infant mortality in affected communities.

Beyond health, the e-waste sector has become an issue of environmental injustice: low-income communities bear the burden. Those living near dumps (99.6% of workers and their families live in adjacent sites) face chronically polluted air and land. Heavy metals and toxins accumulate in local food chains such as fish and crops downstream of Accra's dumps have unsafe levels of Pb, Cd, Cu and PCBs.

- Health effects: Exposure causes severe organ and nerve damage. Lead (from monitors/cables) leads to brain damage and reduced fertility, cadmium harms lungs and kidneys, and mercury impairs memory and fine motor skills.
- Worker conditions: Most scavengers are impoverished youth who work 7+ years on these sites under filthy conditions. Without safety gear, they endure burns, metal ingestion, and cancer risk (Traverso et al., 2024).
- Community burden: Villagers and urban poor near dumps inhale pollutants daily and inadvertently consume contaminated water and food. Studies confirm that eggs, fish and vegetables from dump vicinities carry heavy metals far above safe limits ⁸.

Socioeconomic Impacts

The e-waste trader has little stability. Income is irregular and social protection is non-existent. At Agbogbloshie and other Accra-area sites, an estimated 8,000-10,000 people (men, women and children) earn income by collecting and recycling scrap ⁹. Most are poor migrants from northern Ghana or rural areas, driven by a lack of alternatives. Although exact wages are low (often a few cedis per day), many workers view e-waste trading or salvaging as providing better pay than subsistence agriculture. Our interviews corroborated that for every 1,000 tonnes of e-waste handled, 15 jobs in recycling and 200 jobs in repair emerge, much of it in small workshops. This trade however has little stability. Income is irregular and social protection is non-existent. The demolition exercise at Agbogbloshie highlights this, as around 8,000 people lost their workplace overnight ¹⁰.

Creative Solutions by Communities

Electro Recycling Ghana (ERG)

Ghana's first licensed e-waste recycler, ERG, has built a formal, circular-processing enterprise from an innovative Ghana-Germany partnership. Founded when partners realised that unwanted European monitors and TVs could serve rural Ghana, ERG now collects corporate and imported e-waste, approximately 520 tonnes from last year (80 % from domestic companies and 20 % from imports) and repurposes it into usable products. For example, surplus 19"–28" monitors are converted into working televisions and spent lithium batteries are rebuilt into power banks. This creative remanufacturing not only diverts waste but supplies affordable electronics to underserved communities.

ERG operates through formal channels. It maintains EPA permits and certified transport to legally collect e-waste from companies committed to sustainability, ensuring accountability in the value chain. In practice, ERG often must even purchase waste from reluctant generators because many firms lack awareness of proper disposal, documenting each shipment thoroughly. Imported electronics are rigorously tested to ISO standards; functional units enter Ghana as reuse items, while true waste is handled under the Basel Convention.

ERG emphasises hand-sorting and mechanical processing over burning. A trained team follows strict SOPs: each device is first tested for reparability, and only irreparable units are dismantled. Workers use powered screwdrivers and cable-strippers to recover components,

avoiding open combustion of plastics. For instance, specialised shredders and strippers extract copper from insulated wires without releasing toxins. This contrasts sharply with the hazardous methods common in the informal sector. The company invests in community engagement and training, collaborating with the EPA and international partners to run awareness campaigns on e-waste and batteries, and to develop local processing capacity.

AppCyclers

Based in Tamale (Northern Ghana), AppCyclers is a digital first waste tech startup launched in 2019. It built a web and mobile platform to link every part of Ghana's e-waste chain, from households and businesses, through informal collectors, to recyclers and manufacturers. As their website explains, AppCyclers "leverages web technology, data analytics, and community engagement to promote the safe collection, processing, and ethical recovery of electronic waste." In practice, an individual or company can schedule a pickup of old electronics or drop them at a collection point. AppCyclers' team then manually dismantles the materials, recovering metals and plastics to sell to certified downstream partners.

AppCyclers has processed roughly 400-500 kg per month (\approx 500 kg average) and 250 tonnes in total since inception which is about 90 % of that sourced from Ghanaian companies. This steady volume underscores both the demand for proper disposal and the power of their outreach in formal and informal networks.

Rethinking e-waste:

Policy Implications and Recommendations

- **Strengthen Policy & Enforcement**

Fully implement Extended Producer Responsibility (EPR) regulations and ensure compliance by all electronics producers and importers as well as the introduction of incentives for eco-design and sustainable product life extension.

- **End waste colonialism:** Wealthy governments and companies must end irresponsible exports. All used electronics shipped to Ghana should be functional and destined for reuse; anything requiring disposal or hazardous processing must be handled in the exporter's country. Enforce the Basel Convention and Bamako Convention.

- **Formalise and protect waste workers:** Recognise scrap collectors and dump workers as legitimate economic actors. Integrate Informal and Formal Sectors and establish fair and inclusive buy-back and franchising models to connect informal collectors with licensed recyclers to promote integration. The informal sector needs empowerment by providing them with safety training, PPE, and certification for informal workers.

- **Embed circular economy and justice principles:** Launch incentives (tax credits, grants or rebates) to spur domestic repair and recycling businesses. Promote "design-for-repair" standards: require manufacturers to sell spare parts and repair manuals locally. Invest

in vocational training so that technicians can refurbish electronics (extending product life) instead of discarding them. Integrate e-waste into industrial policy by supporting local innovation hubs.

- **Expand Collection Infrastructure**

Set up accessible e-waste drop-off points in urban and rural areas. Also promoting the use of digital platforms to coordinate pickups and track disposal flows.

- **Promote Repair, Reuse, and Refurbishment**

Support community repair hubs and promote consumer rights to repair. Encourage electronic companies to offer consistent awareness campaigns, repair services and trade-in programs. Companies need to treat e-waste not as a CSR or environmental event occurrence but as day to day operations, integrated in its quality control or aftersales operations.

- **Consumer Awareness & Behavior Change**

Run nationwide campaigns on safe e-waste disposal, data security in recycling, and environmental risks. This should be a multi-stakeholder approach. Stakeholders incentivize consumers to return old devices through discounts, rewards, or cash-back. However, the preference would be a consumer mindset shift that can inspire voluntary submission of e-waste as citizen responsibility.

Conclusion

Ghana's e-waste crisis must be addressed with a new development model that centers on equity, justice and African leadership. Kwame Nkrumah observed that Africa's riches "have been and are still being used for the greater development of overseas interests"¹¹. (Nkrumah, 1965). Today, over 60 years later, waste flows still perpetuate that pattern: informal scavengers in Accra suffer "waste colonialism", burning dumped electronics for foreign benefit. Ghana must rewrite this script through bold action by every stakeholder. While there is growing awareness of the hazards posed by e-waste, both the formal and informal sectors still face significant gaps in infrastructure, regulation, and capacity.

The informal sector continues to dominate collection and initial processing due to its agility and reach, but often employs hazardous methods. The formal sector offers safer, more compliant processing, yet struggles with insufficient supply and high operational costs. Integration of the two could create a robust and inclusive e-waste management system. Consumer behavior, marked by rapid electronics turnover, hoarding, and low disposal awareness, further exacerbates the problem. Without targeted interventions, Ghana risks escalating environmental pollution, health hazards, and loss of valuable resources embedded in discarded electronics.

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