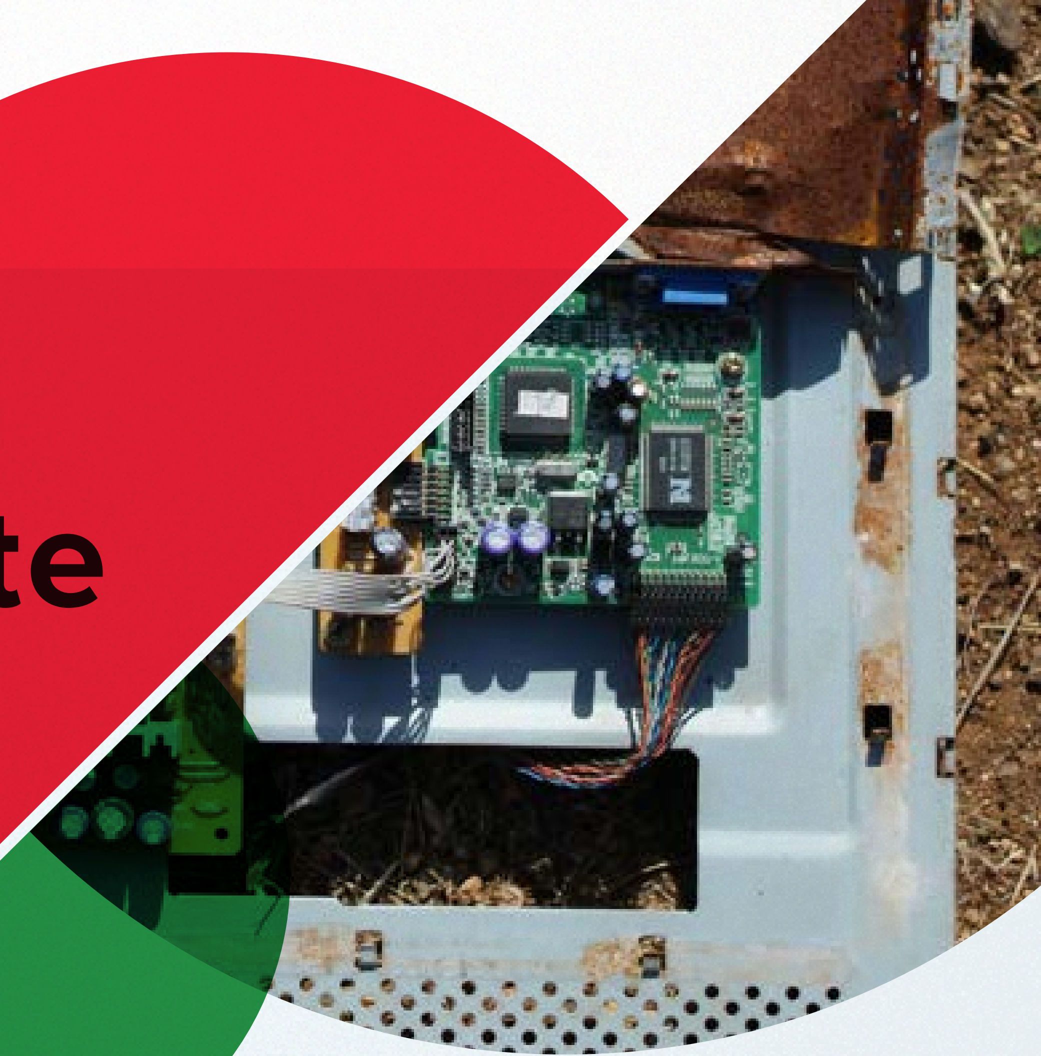
National E-waste Monitor 2026

KENYA



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National E-waste Monitor 2026

KENYA

Colophon

This report was prepared through a collaborative project involving the United Nations Institute for Training and Research and Kenya National Bureau of Statistics.

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DISCLAIMER

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Acronyms and Abbreviations

C&BC	Customs & Border Control
CA	Communications Authority of Kenya
CAPEX	Capital expenditures
CSR	Corporate Social Responsibility
E-waste	Electronic waste
EACO	East African Communications Organisation
EEE	Electrical and electronic equipment
EIA	Environmental Impact Assessment
EMCA	Environment Management and Coordination Act
EOL	End-of-Life
EPR	Extended Producer Responsibility
EPRA	Energy and Petroleum Regulatory Authority
EPROK	Electronic-Waste Producer Responsibility Organisation of Kenya
ESG	Environmental, Social, and Governance
EWIK	E-waste Initiative Kenya
GDP	Gross Domestic Product
GESP	Global E-waste Statistics Partnership
GVA	Gross value added
HS	Harmonized System
ICT	Information and Communication Technology
IMF	International Monetary Fund
Int$	International Dollar
ITU	International Telecommunication Union
KDHS	Kenya Demographic and Health Survey
KEBS	Kenya Bureau of Standards

KenTrade	Kenya Trade Network Agency
KES	Kenyan Shillings
KIHBS	Kenya Integrated Household Budget Survey
KNBS	Kenya National Bureau of Statistics
KRA	Kenya Revenue Authority
kg	kilogram
kt	Thousand metric tonnes
MSW	Municipal Solid Waste
Mt	Million tonnes
NEMA	National Environment Management Authority
OpEx	Operating expenditure
POM	Placed on the Market
PPP	Purchasing-power-adjusted
PROs	Producer Responsibility Organisations
PV	Photovoltaic

RIA	Regulatory Impact Assessment
RWD	Random Walk with Drift
SCYCLE	Sustainable Cycles Programme
SDGs	Sustainable Development Goals
t	Metric tonnes (1000kg)
UEEE	Used Electrical and electronic equipment
UN Comtrade	United Nations Commodity Trade Statistics database
UNEP	United Nations Environment Programme
UNITAR	United Nations Institute for Training and Research
UNSD	United Nations Statistics Division
UNU	United Nations University
UNU-KEYs	Product-based classification distinguishing 54 (v.1) or 57 product groups (v.2)

Executive Summary

The use of electrical and electronic equipment (EEE) is increasing in Kenya, driven by the country's rising population, expanding access to electricity, the growing availability of electronic goods, and demand for digital products. This increase has delivered widespread benefits, including improved access to information and communication services, productivity gains across economic sectors, and increases in quality of life. At the same time, the increasing use of EEE in Kenya has led to a sustained rise in electronic waste (e-waste), the improper treatment of which can pose risks to the environment and human health.

The use of electrical and electronic equipment (EEE) is increasing in Kenya.

ABOUT THIS REPORT

The 2026 *National E-waste Monitor for Kenya* ('The Monitor') applies internationally recognised and statistically harmonised methodologies to quantify the lifecycle of electronics in Kenya. It provides up-to-date estimates of quantities of EEE placed on the market (POM), EEE stocks, e-waste generation, and the end-of-life management of e-waste. The Monitor documents current e-waste management systems in Kenya, the institutional and legal frameworks governing e-waste in the country, and the status of e-waste statistics production. It discusses opportunities and challenges associated with increasing environmentally sound e-waste management in Kenya, including the financial requirements for doing so, and provides recommendations for steps that can be taken to improve e-waste management going forward.

Preparation of this report has followed a collaborative, multi-stakeholder process involving government ministries and agencies in Kenya, private sector actors including waste collectors and recyclers, and technical support from UNITAR. Kenya is one of the pilot countries participating in the United Nations Environment Programme (UNEP) project *Enhancing capacities to measure progress towards a circular economy (2024-26).*

The project[1] takes a multi-level approach to building global capacity around data and statistics on the circular economy, focussing on:

1. Developing and strengthening statistical methodologies at the global level;
2. Supporting regional capacity building and dialogue between data users and producers; and
3. Enhancing, through tailored national activities, the technical capabilities of country-level institutions to regularly publish datasets on the circular economy and waste.

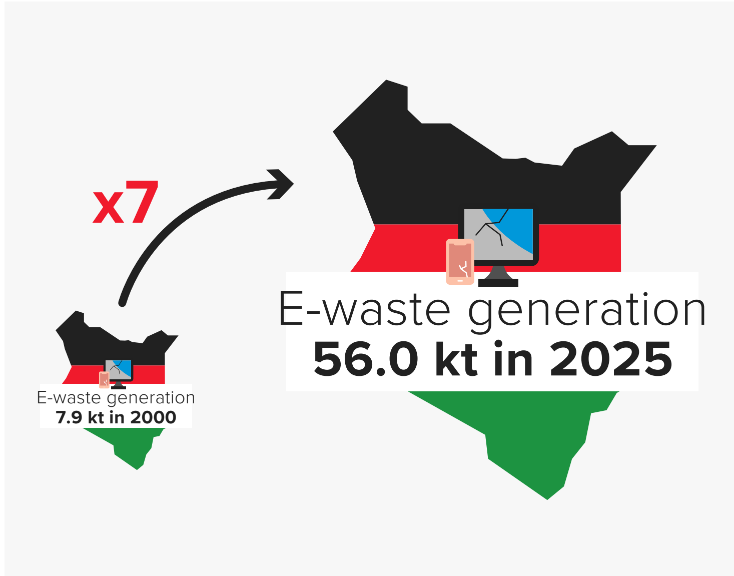
These activities aim to support improved global monitoring of progress against the Sustainable Development Goals (SDGs) and policymaking at the national level.

[1] A summary of the project and its activities can be found here.

KEY FINDINGS

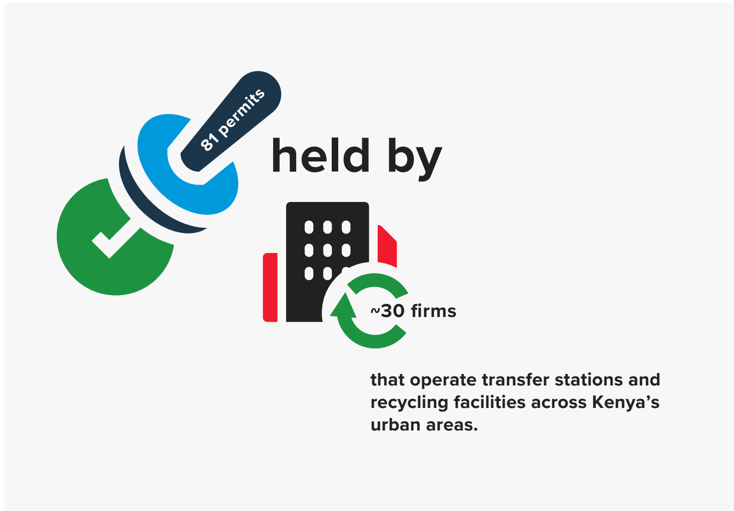
EEE POM and E-waste Generation is increasing in Kenya

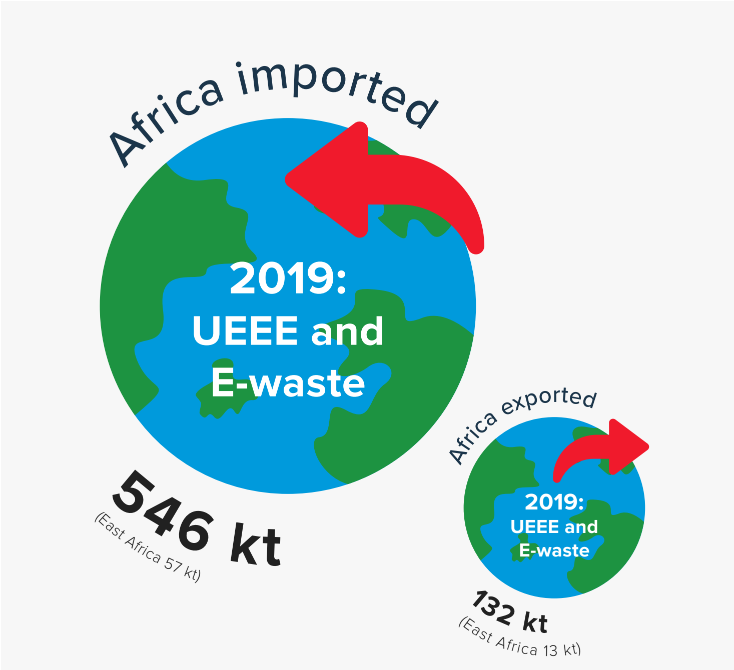
- EEE POM in Kenya reached 109.6 kilotonnes (kt) in 2025. Small equipment accounted for the largest share of EEE POM in 2025 (46.7 kt; 43 per cent), followed by large equipment excluding photovoltaic (PV) panels (24.3 kt; 22 per cent), and temperature exchange equipment (19.1 kt; 17 per cent). Screens and monitors stood at 8.6 kt in 2025, lamps, 2.3 kt, and PV panels, 1.8 kt.
- E-waste generation in Kenya grew from 7.9 kt in 2000 to 56.0 kt in 2025, a more than a sevenfold increase. Small equipment constituted the largest share of the waste stream in 2025 (21.9 kt; 39 per cent), followed by temperature exchange equipment (11.0 kt; 20 per cent), and small IT and telecommunication equipment (6.6 kt; 12 per cent). Households accounted for the majority of e-waste generation, making up an estimated 40.6 kt in 2025 compared with 15.4 kt generated by businesses and other non-household sectors.
- E-waste generation stood at approximately 0.98 kg per capita in 2025, below the Eastern African average (1.1 kg), African average (2.7 kg), and global average (8.6 kg).



The informal sector represents the majority of e-waste handling in Kenya, though formal collection and recycling is increasing

- The informal sector plays a central role in e-waste management in Kenya, undertaking activities ranging from collection and waste picking to sorting, dismantling, resale, refurbishment, and material recovery.
- The Inventory of Waste Management Facilities in Kenya maintained by the National Environment Management Authority (NEMA) records 81 permits associated with e-waste management specifically. These are held by approximately 30 firms that operate transfer stations and recycling facilities across Kenya's urban areas.
- In 2025, an estimated 1.2 kt of e-waste was delivered to e-waste collection centres and a further 1 kt was collected through pick-up services, such as those operated by firms holding NEMA permits for e-waste management. Taken together, these formal collection pathways captured the equivalent of 3.9 per cent of e-waste generated.
- The informal and formal sectors are closely interconnected in Kenya. Survey responses from recyclers indicate that up to 30 per cent of the feedstock received by formal recyclers originates from informal collection channels. Applying this share suggests that approximately 0.7 kt of e-waste collected informally was transferred to formal recyclers in 2025, increasing the quantity handled by the formal collection and recycling system to an estimated 2.9 kt or 5.1 per cent of e-waste generated. Formal operators are generally better placed to manage hazardous components requiring specialised treatment.





Achieving a 25 per cent formal collection target by 2040 would require annualised financing:

USD 5.8–10.5 million

rising to

USD 10.1–18.4 million

under a 40 per cent collection target.

Transboundary movements remain a significant driver of e-waste flows

- Transboundary movement remains a driver of e-waste flows in Kenya, although these flows are difficult to quantify and are only partially captured in official statistics. The Global Transboundary E-waste Flows Monitor estimated that Africa imported approximately 546 kt and exported 132 kt of used EEE (UEEE) and e-waste in 2019, with the majority of these flows occurring through undocumented channels. Within East Africa, imports were estimated at approximately 57 kt, of which around half originated from Europe and one-third from within the East African region, while exports were estimated at 13 kt and occurred exclusively within the East African region.
- Reporting of transboundary e-waste movements under the Basel Convention has been limited over the past decade, with Kenya reporting approximately 600 tonnes of e-waste exports in 2020 and no imports. Trade statistics reported under HS 8549 recorded 12.3 tonnes of imports and 66.3 tonnes of exports of electrical and electronic waste and scrap between 2022 and 2024, including trade with Uganda, Rwanda, the Democratic Republic of Congo and Türkiye.
- There are differing views on the extent to which transboundary movements of e-waste and UEEE constitute a problem. While concerns persist regarding the movement of hazardous materials and environmentally unsound recycling practices, these flows have also been highlighted as supporting product life extension, material recovery, and livelihoods.

Expanding formal collection and environmentally sound recycling of e-waste offers a major opportunity to create economic value, reduce environmental impacts, and accelerate Kenya's transition to a circular electronics economy

- Circular economy activities already play an important role in Kenya's electronics sector, including reuse, repair, refurbishment, dismantling and recycling. Strengthening collection and environmentally sound treatment systems represents an opportunity to build on and scale the benefits associated with these activities.
- E-waste represents a significant resource opportunity. The estimated value of metal fractions in Kenya's e-waste stream reached approximately USD 48–50 million in 2025, highlighting the economic value of materials embedded in e-waste.
- Achieving higher levels of formal collection and recycling will require additional investment. Based on the financing analysis, achieving a 25 per cent formal collection target by 2040 would require annualised financing of approximately USD 5.8–10.5 million per year, rising to USD 10.1–18.4 million per year under a 40 per cent collection target.
- Higher formal collection rates would also increase the share of materials being handled in an environmentally sound way. Between 2026 and 2040, under a scenario in which a 25 per cent formal collection target is reached by 2040, the value of metal fractions collected could amount to USD 238–257.8 million, with a midpoint of USD 248 million. Under the 40 per cent scenario, the value of metal fractions collected could amount to USD 417.6 - 452.5 million, with a midpoint of USD 435.0 million.
- Improved e-waste management in Kenya can generate environmental, economic and social benefits additional to the recovery of secondary materials, including reduced environmental damage, improved environmental and occupational health outcomes, and the creation of employment and enterprise opportunities across the electronics value chain.

STRATEGIC IMPLICATIONS AND RECOMMENDATIONS

Against this backdrop, several strategic implications emerge for strengthening Kenya's transition towards a more circular and environmentally sound electronics system.

I. Advancing policy and regulation

Kenya has made significant progress in developing the institutional and regulatory foundations for e-waste management. The Sustainable Waste Management Act (2022) and the Sustainable Waste Management (Extended Producer Responsibility) Regulations (2024) established the country's first national EPR framework and have made Kenya the first country in East Africa to introduce EPR regulations.

The current policy transition presents an important opportunity to improve financing, expand collection systems, and strengthen data generation on e-waste flows. The principal challenge now lies in implementation, including the operationalisation of producer responsibility systems, enforcement, and institutional coordination. In 2025, NEMA drafted dedicated Electrical and Electronic Waste Management Regulations introducing product-specific requirements for registration, collection, recycling, and disposal. In parallel, the Electronic Equipment Disposal, Recycling and Reuse Bill introduced in the Senate provides an additional pathway for strengthening sector governance.

Recent policy developments provide an opportunity to strengthen e-waste financing, governance, and data.

Recommendations:

1. Accelerate implementation of EPR systems, including the establishment and scaling of Producer Responsibility Organisations (PROs), while strengthening EPR registration, certification, reporting, and data flows to NEMA.
2. Strengthen enforcement and institutional coordination across NEMA, national and county governments, and other relevant authorities to improve compliance monitoring, accountability, and implementation effectiveness among producers, importers, distributors, refurbishers, and recyclers.
3. Establish progressive collection and recycling targets to guide implementation, monitor performance and provide long-term certainty for investment.
4. Strengthen monitoring, reporting and enforcement systems to improve data on EEE flows, e-waste generation, collection and treatment outcomes.
5. Ensure that emerging regulations support reuse, repair, and refurbishment as well as recycling in support of a circular economy in electronics.

II. Collection systems and recycling infrastructure

Formal collection and environmentally sound recycling systems are growing but remain underdeveloped relative to the scale of e-waste generation in Kenya. Collection infrastructure outside Nairobi and a small number of major urban centres are limited, constraining access to formal disposal pathways. Although the number of licensed recyclers has increased in recent years, formal systems captured only a small share of total e-waste generated in 2025. At the same time, many valuable and hazardous fractions continue to require export for downstream treatment due to limited domestic processing capacity. Scaling environmentally sound collection and treatment infrastructure should be a major national priority.

Formal collection and recycling systems are expanding, and scaling this infrastructure is needed to increase environmentally sound management of e-waste.

Recommendations:

1. Expand nationwide collection and reverse logistics systems, including county-level drop-off centres, producer-led take-back schemes, and collection networks that improve access to formal disposal pathways across Kenya.
2. Increase investment in pre-processing, recycling and environmentally sound treatment infrastructure, while improving the geographic distribution of formal facilities beyond Nairobi and major urban centres.
3. Strengthen domestic capacity to manage hazardous and high-value e-waste fractions, including refrigerants and persistent organic pollutants (POPs), while reducing dependence on export markets for downstream treatment where environmentally and economically feasible.

III. Formal sector development and informal sector integration

Informal actors play a central role in the collection, repair, refurbishment, dismantling, aggregation and recovery of e-waste in Kenya and are likely to remain a key part of the sector. Formal and informal actors already operate within connected value chains, with materials frequently moving from informal collectors, dismantlers and aggregators to formal recyclers and downstream treatment facilities. Expanding environmentally sound e-waste management should therefore focus on strengthening linkages between formal and informal actors while building formal capacity in areas where specialised treatment, environmental controls or regulatory oversight are required. Achieving this will also require addressing financing constraints that can limit the competitiveness and expansion of formal collection and recycling systems.

Given the interdependence of informal and formal actors, system development should focus on targeted formal capacity building while strengthening support for informal-sector workers.

Recommendations:

1. Strengthen linkages between informal actors and formal collection, recycling and EPR systems, recognising the central role that informal collectors, repairers, refurbishers, dismantlers and aggregators already play within Kenya's e-waste value chains.
2. Support progressive formalisation where appropriate through training, business development support, access to finance, and simplified regulatory pathways.
3. Expand training, technical support, equipment provision, and occupational health and safety measures, including through vocational education and targeted technical skills programmes.

4. Reduce environmentally harmful practices such as open burning and unsafe dismantling through enforcement, awareness raising, and safer recovery alternatives.
5. Prioritise formal sector investment in the management of hazardous, specialised and low-value e-waste fractions where specialised treatment, environmental controls or regulatory oversight are required.

IV. Data systems and statistics

Kenya has made important progress in developing national e-waste statistics, including publication of official e-waste data. The implementation of EPR systems also creates significant opportunities to centralise data on formal collection and recycling activities and improve national monitoring systems. Data gaps nevertheless remain, particularly regarding informal sector flows, end-of-life pathways, collection rates, and downstream material recovery. Strengthening data systems across the full lifecycle of electronics should therefore be treated as a foundational priority for evidence-based policymaking and monitoring.

National e-waste statistics are now published. Regulatory reporting mechanisms need to be harnessed to address remaining data gaps and international reporting should be strengthened.

Recommendations:

1. Strengthen implementation of EPR reporting obligations, ensuring reporting captures products placed on the market, collection, treatment, recovery, exports, and downstream material flows.
2. Expand existing statistics on e-waste to capture the full scope of products, including PV panels.
3. Complement EPR reporting systems with household and business surveys and targeted studies to improve understanding of informal sector activities, end-of-life pathways, and transboundary movements.
4. Expand monitoring to adjacent product streams such as batteries and electric vehicles, while strengthening reporting on related circular economy indicators and hazardous substances inventories.
5. Institutionalise regular reporting of e-waste statistics through national monitoring systems and international reporting mechanisms, including against the Sustainable Development Goals (SDGs) and the submission of relevant data to the United Nations Statistics Division (UNSD) as part of the Questionnaire on Environmental Statistics.

V. Circular economy transition and sustainable financing

Kenya has a significant opportunity to strengthen circular economy activities across the electronics value chain, including repair, refurbishment, reuse, recycling and secondary materials recovery. Realising this opportunity will require sustainable financing mechanisms capable of supporting collection systems, infrastructure investment and environmentally sound treatment. EPR implementation provides an important opportunity to establish more stable and predictable financing for the sector while supporting broader circular economy development.

Kenya has a significant opportunity to strengthen circular economy activities across the electronics value chain

Recommendations:

1. Fully operationalise EPR financing systems and explore complementary mechanisms, including deposit-refund systems, take-back incentives, and public-private partnerships, to support long-term collection, recycling, monitoring, and environmentally sound treatment activities.
2. Increase public and private investment in collection, recycling and secondary materials recovery infrastructure.
3. Support innovation, entrepreneurship and circular business models in repair, refurbishment, reuse, recycling and secondary materials recovery activities.

Chapter 1. Introduction

WHAT IS E-WASTE AND WHY DOES IT NEED ATTENTION?

Electrical and electronic equipment (EEE) refers to equipment which is dependent on electric currents or electromagnetic fields to work properly, and equipment for the generation, transfer and measurement of such currents and fields (Kenya National E-waste Management Strategy, 2019). Once EEE or its components are discarded by an owner without the intention of reuse, they become electronic waste (e-waste).[2]

Across Africa, an estimated 3.5 million metric tonnes of e-waste were generated in 2022, equivalent to 2.5 kilograms per person (Baldé et al. 2024). Only 25 kt of this, or 0.7 per cent, was formally collected and recycled through regulated systems operating in accordance with environmental, health, and safety standards. When e-waste is not managed in an environmentally sound manner, hazardous substances contained in EEE such as mercury and lead, can contaminate the environment and pose risks to human health. At the same time, failing to reintegrate e-waste back into the economy through activities such as recycling represents a missed opportunity to recover valuable secondary raw materials. This not only results in economic losses but also increases reliance on primary material extraction with its associated upstream environmental impacts.

BACKGROUND INFORMATION ON KENYA

Socio-demographics

Kenya is located in East Africa, bordering South Sudan, Ethiopia, Uganda, Somalia, the United Republic of Tanzania, and the Indian Ocean. The country is governed under a two-tier system comprising the national government and 47 county governments. Counties are responsible for services including solid waste management, while the national government is responsible for the establishment of legislative frameworks governing waste and environmental management. As of mid-2025, Kenya's population stood at 53.3 million people, approximately four times higher than in 1975 and double that in 2000 (KNBS, 2026; World Bank, 2025a). The country is rapidly urbanising, with its population concentrated in Nairobi and a small number of other urban centres. Kenya's population is projected to reach 70.2 million by 2045 (KNBS, 2022a).

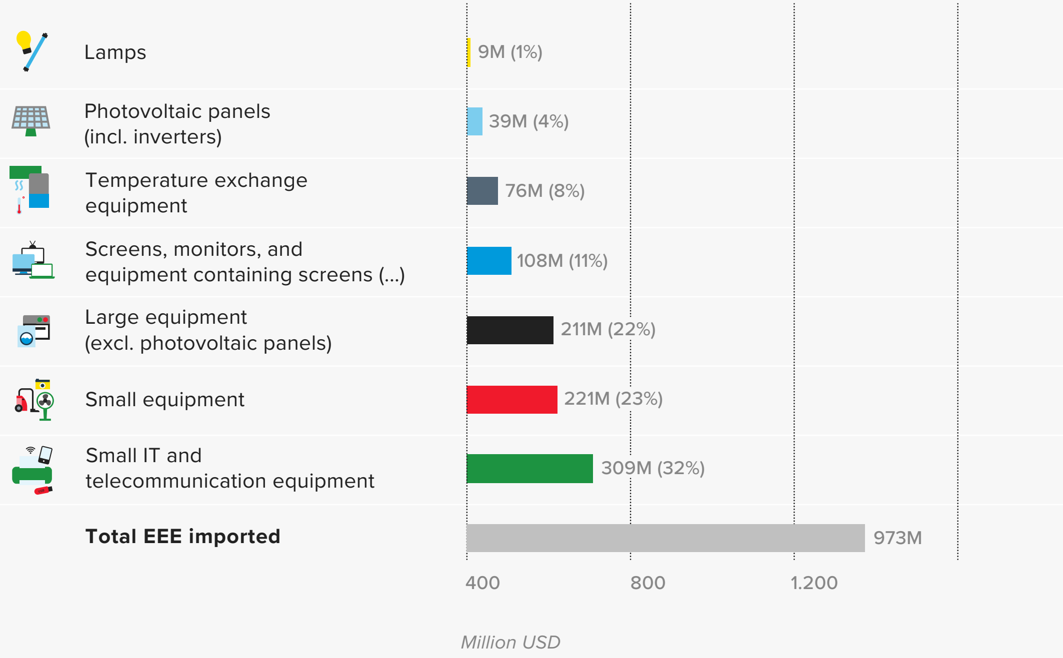
Gross domestic product (GDP) in Kenya stood at approximately USD 120.3 billion (KES 16,224.5 billion) in 2024 (World Bank, 2025b). This equated to USD 2,130 per capita in nominal terms or Int$ 6,600 per capita when accounting for purchasing power parity (PPP) (World Bank, 2025c; 2025d). In 2025, services made up approximately 55 per cent of Kenya's GDP, agriculture contributed 23 per cent, and industry, 16 per cent (KNBS, 2026). Excluding small-scale agriculture, total employment across the formal and informal sectors in the country was 21.6 million in 2025, with more than 80 per cent of non-agricultural employment classified as informal (KNBS, 2026). 39.8 per cent of Kenya's population were living below the national poverty line in 2022 (KNBS, 2024).

[2] Otherwise referred to as waste electrical and electronic equipment (WEEE) or e-scrap.

The use of electronics in Kenya

The use of EEE is increasing in Kenya, driven by demographic and economic trends. As of 2023, 76.2 per cent of the population had access to electricity while more than a third (34.9 per cent) of households have an internet connection (World Bank, 2025e; CA and KNBS, 2025). According to data from UN Comtrade, imports into Kenya of EEE goods within the scope of this study reached 973 million USD in 2023 (Figure 1) (UN Comtrade, 2025). Rapid growth in the Information and Communication Technology (ICT) sector as one component of this, has been driven by expanding digital infrastructure and rising demand for e-services (KNBS, 2026).

Figure 1. Imports of EEE goods by Waste CAT, Kenya, 2023 (USD millions) (Source: UN Comtrade, 2026)[3]



[3] See E-waste Statistics Guidelines Edition 3 for list of HS codes used.

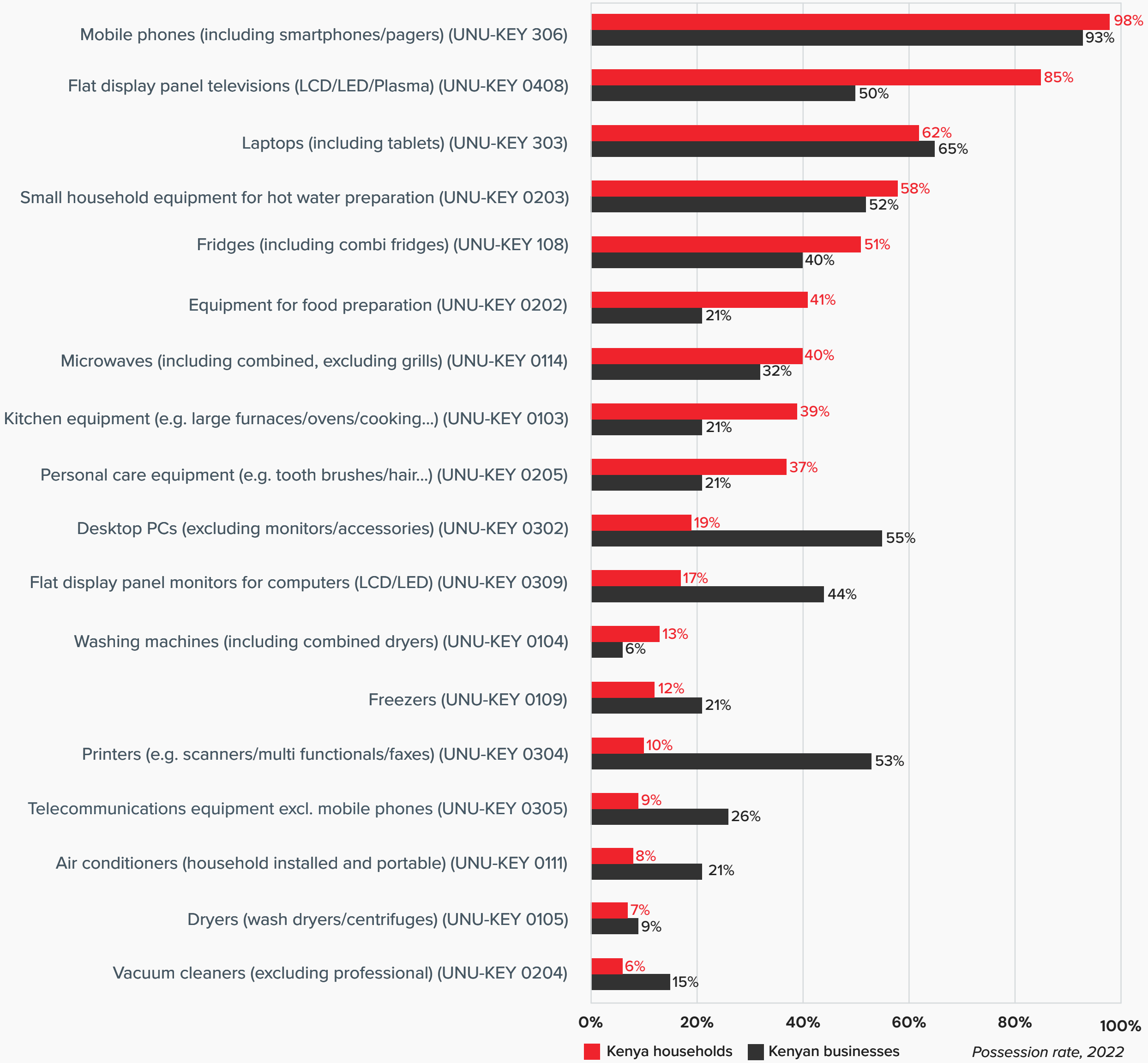
Table 1. Proportion of households owning select electronic products in Kenya (Source: KNBS, 2012; KNBS, 2018; KNBS, 2022b)

Product	UNU-KEY	Year	Urban	Rural	National
Radio	0403	2009	78.4	71.30	74.0
TV	0309 0408	2009	47.8	15.80	28.0
Mobile Phone	0306	2009	80.2	52.70	63.2
Landline Phone	0305	2009	2.6	0.04	1.2
Computer	0302 0303	2009	7.9	0.90	3.6
Fridge	0108	2009	10.9	0.80	4.7
TV	0309 0408	2015	53.1	15.70	32.0
Computer	0302 0303	2015	12.0	2.40	6.6
Radio	0403	2019	54.5	58.50	57.0
TV	0309 0408	2019	60.6	25.10	38.8
Computer	0302 0303	2019	18.0	3.00	8.8
Fridge	0108	2019	19.1	2.40	8.9

Official statistics show that ownership rates for televisions (TVs), computers, and fridges across households in Kenya have risen over the last two decades (Table 1). Strong urban-rural disparities exist while household ownership rates are lower for product groups such as cooking appliances (Wambugu and Muriithi, 2024).

As well as households, businesses and public-sector bodies are increasing consumers of EEE goods in Kenya (Figure 2). While this demand is largely met through imports, there are some indications that domestic production of EEE in Kenya is growing and exports were an estimated 82 million USD in 2023 (UN Comtrade, 2025).

Figure 2. Percentage of Kenyan households and businesses in possession of at least one type of EEE by type (Source: UNITAR, 2023)[4]



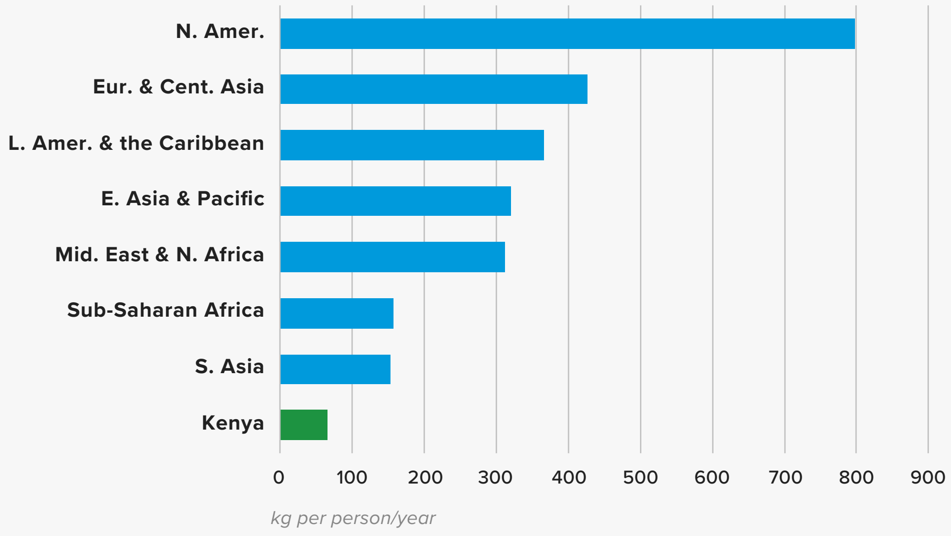
WASTE MANAGEMENT INFRASTRUCTURE IN KENYA

Kenya generates approximately 65.4 kg of municipal solid waste per person annually, which is below the Sub-Saharan African average (Figure 3) (Cook et al., 2026). Total municipal waste generation was approximately 3.02 million tonnes in 2023[5] and is projected to rise to 7.7 million tonnes by 2040 (UNSD,2025; Cook et al., 2026). Solid waste generation by the industrial and construction sectors adds to the country's total waste generation and was reported to be 81.6 million tonnes in 2017 (KNBS, 2023).

Organic waste accounts for approximately 70 per cent of municipal waste by weight in Kenya[6], followed by plastics (15 per cent), glass (6 per cent), paper (3 per cent), and metals (2 per cent) (KNBS, 2025b). E-waste forms part of the remaining four per cent classified as other waste streams.

[4] The survey was undertaken in the counties of Nairobi, Mombasa, Nakuru, and Kisumu, which are characterised by relatively high levels of urbanisation and economic activity. As a result, the reported ownership rates may not be representative of household and business EEE ownership patterns across Kenya as a whole.
[5] Data for 2023 is for Nairobi, Mombasa, Kisumu, and Nakuru.
[6] Based on a study in Nairobi County, with this figure likely higher in rural counties.

Figure 3. Per capita municipal solid waste generation by world region, including Kenya highlighted (Source: Cook et al., 2026)



The quantity of municipal waste recorded as having been collected in Kenya stood at 2.03 million tonnes in 2023 (UNSD, 2025). According to the 2024 Kenya Voluntary National Review (VNR), the proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated across key cities in the country has risen since 2019, standing in 2023 at 86 per cent in Nairobi, 60 per cent in Nakuru, 58 per cent in Mombasa, and 30 per cent in Kisumu (State Department for Economic Planning, 2024). In many low-income and informal settlements, collection services nevertheless continue to be absent (NEMA, 2021). At the national level, a third (31.8 per cent) of municipal waste generated is thought to go uncollected, finding resolve primarily through open burning, composting or local recycling, and dumping in informal dumpsites (UNEP, 2018; Cook et al., 2026).

Where collection systems are in place in Kenya, these typically consist of a mix of services operated by counties, private contractors, and informal providers (NEMA, 2021). Collection infrastructure has been constrained relative to the scale of waste generation, with relatively few transfer stations or sorting facilities (NEMA, 2021). Private sector investment in waste collection, transportation, sorting, and recycling in Kenya is expanding (Badenoch et al., 2024). NEMA records approximately 15,000 waste transporter licences, 73 per cent of which are concentrated in Nairobi, Mombasa, Kiambu, and Nakuru counties.

NEMA's Inventory of Waste Management Facilities records approximately 3,000 waste management licences. These licences were issued across a range of waste management activities, including recycling facilities (996), transfer stations (965), incineration-related facilities (500), composting sites (363), and landfills or dumpsites (141). Based on the waste streams reported to be handled across these licences, metals were the most commonly reported waste type (29 per cent of licences), followed by plastics (18 per cent), organic and food waste (13 per cent), and biomedical and healthcare waste (11 per cent). Smaller shares of licences reported handling hazardous waste (6 per cent), paper waste (4 per cent), e-waste (1.3 per cent), and batteries (0.6 per cent).

Figure 4. Dandora landfill, Nairobi (Source: Joseph Limo/Tearfund)

According to data reported to UNSD, the primary disposal route for collected municipal waste in Kenya is landfilling at present, with virtually all tonnes of municipal waste reported to be managed through this route between 2014 and 2024 (UNSD, 2025). The Dandora dumpsite in Nairobi County, widely cited as the largest open dumpsite in the country, provides a well-documented example of open dumping. Waste picking from the landfill face is widespread, including for e-waste (Figure 4).

E-waste collection and treatment

EEE in Kenya often passes through multiple stages of repair, reuse, refurbishment, and resale before reaching end-of-life. Repair and reuse activities are widespread, particularly within the informal "Jua Kali" sector, which is estimated to support more than 500,000 workers (Munro et al., 2022; Manufacturing Africa, 2022). Products that can no longer be repaired or reused, often following periods of stockpiling, may be collected through formal or informal channels, including as part of mixed municipal waste collection, or via county or privately operated collection centres, retailer take-back schemes and other pick-up services, by informal door-to-door buyers and scrap collection, or dumped or burned locally. Disposal pathways can vary by the source of waste generation (Ministry of Environment and Forestry, 2019).[7] For example, government bodies generally invite tenders for disposal, while private sector corporations may donate items as charity.

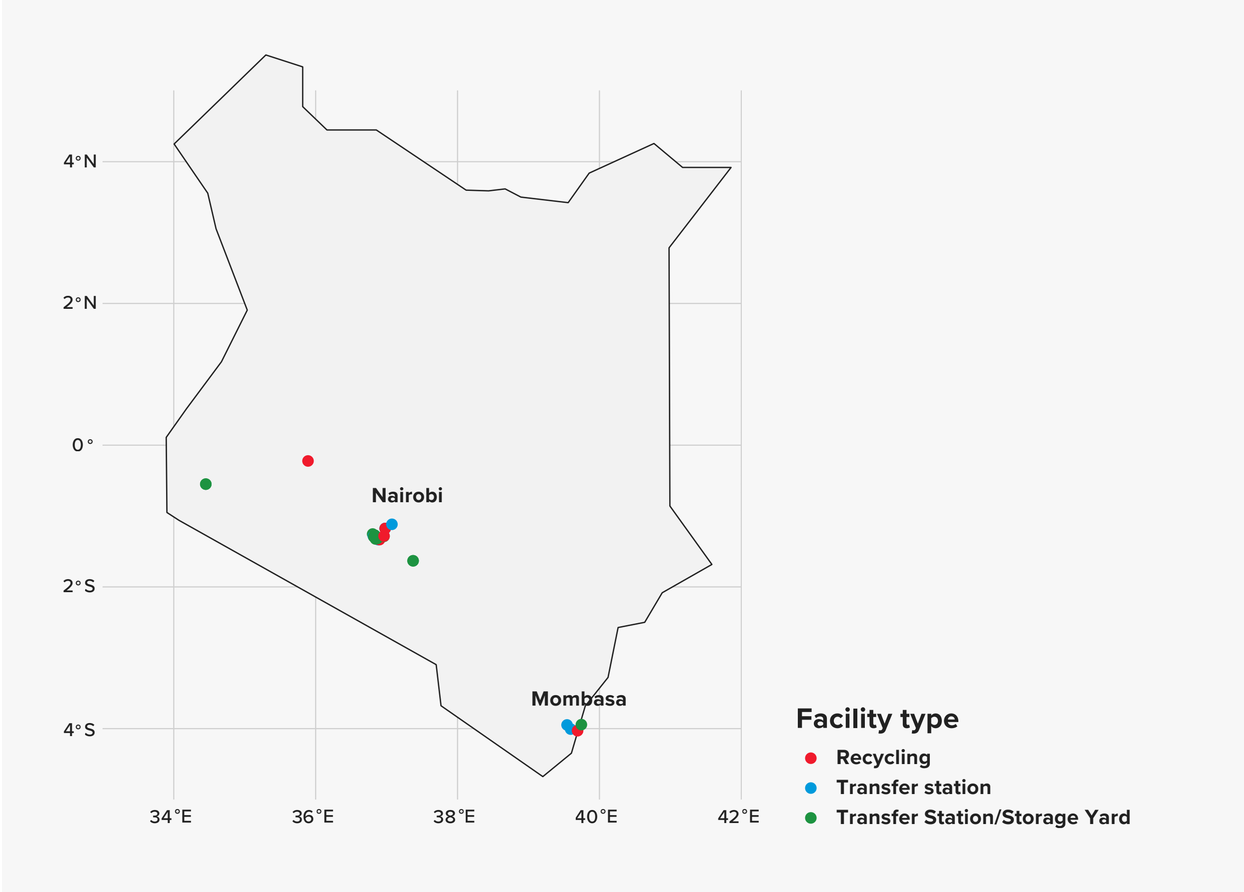
Informal actors[8] play a central role across much of Kenya's e-waste value chain, undertaking collection, reuse, and material recovery (Otieno and Omwenga, 2015). Informal collectors commonly acquire discarded electronics through direct household purchases, waste picking at dumpsites, or collection from businesses and institutions. Processing activities are often carried out using rudimentary methods such as manual dismantling without protective equipment, cable burning, and open-air recovery practices. While these activities support livelihoods and contribute to material recovery, they can also expose workers and surrounding communities to hazardous substances including lead, mercury, cadmium, and brominated flame retardants (Bimir, 2020).

[7] Government institutions typically dispose of equipment through tender-based disposal procedures, while private companies may donate items, sell them into secondary markets, or contract private recyclers. Households frequently store unused electronics for extended periods, dispose of them through mixed waste streams, or sell them to informal collectors and repair technicians.
[8] The International Labour Organization (ILO) defines informality as encompassing economic activities, enterprises, and workers that operate outside formal regulation and protection frameworks (2015).

Previous estimates suggest that less than 10 per cent of e-waste generated in Kenya is managed through formal systems (ASME, 2021). The formal e-waste management system in Kenya is composed primarily of mid-sized collectors, dismantlers, refurbishers, and recycling facilities. Before the introduction of Kenya's Extended Producer Responsibility (EPR) Regulations in 2024, the private sector had already begun establishing several voluntary collection systems for e-waste. Examples include collection points operated by the WEEE Centre in partnership with Safaricom and Carrefour, alongside retailer-led take-back programmes for mobile phones, laptops, and other small electronics (Manufacturing Africa, 2022). At the time of the 2019 National E-waste Management Strategy being published, four companies were formally licensed as e-waste recyclers in the country: WEEE Centre, Sinomet Kenya, Sintmond Kenya, and E-Waste Initiative Kenya (EWIK).

Since then, the formal collection and recycling sector has expanded. At present, NEMA's Inventory of Waste Management Facilities records 81 waste management licences (2.7 per cent of all licences) associated with entities reporting the handling of e-waste operated by approximately 30 companies (NEMA, 2026). These are concentrated in the greater Nairobi area, Kisumu, and Mombasa (Figure 5). 71 or 0.5 per cent of waste transporter licences are for handling e-waste specifically. In the formal sector, recoverable components may be reused directly, or recyclable fractions such as metals and plastics separated for downstream processing. High-value and technically complex fractions, particularly printed circuit boards (PCBs), are generally exported for downstream treatment due to limited domestic refining and material recovery capacity.

Figure 5. Location of facilities reporting handling e-waste, by facility type (Source: NEMA, 2026)[9]



[9] Note, this presents only recyclers for which location data could be retrieved.

NATIONAL E-WASTE REGULATION

Key stakeholders

The Government plays a central role in regulating waste and e-waste in Kenya. Other stakeholders involved in the sector include private companies across the electronics value chain, as well as non-governmental organisations and regional and international bodies. Table 2 summarises the main stakeholders, their roles in e-waste management and regulation, and in data and statistics.

Table 2. Key stakeholders (continues on next page)

Stakeholder	Examples	General roles and responsibilities	Role in data and statistics
Government	County Governments	Local collection and segregation of e-waste; development of collection and recycling infrastructure; enforcement of county-level regulations	Provide data on collection volumes, service coverage, and facilities; report to national authorities
	National Environment Management Authority (NEMA)	Implementation of national waste laws and policy; regulatory oversight; monitoring compliance with environmental legislation	Provide data on licensed facilities, compliance, and hazardous waste management; contribute to national reporting
	Ministry of Environment, Climate Change and Forestry	Policy development and strategic coordination; integration of e-waste into environmental frameworks	Coordinate environmental reporting (including SDGs); define data requirements
	Ministry of Economic Planning	Integration of e-waste into national development plans; resource mobilization	Align e-waste indicators with national planning frameworks and SDGs
	Ministry of Investments, Trade, and Industry	Support to business environment; promotion of extended producer responsibility (EPR); oversight of trade-related aspects of EEE markets	Provide business registry data; coordinate reporting by producers and importers
	Kenya National Bureau of Statistics (KNBS)	Principal agent for the production and dissemination of official statistics; coordination of national statistical system	Compile and disseminate e-waste statistics; ensure alignment with international standards
	Kenya Bureau of Standards (KEBS)	Development and enforcement of product standards related to durability, repairability, and safety	Provide data on certified products and compliance
	ICT Authority	Oversight of public sector ICT infrastructure	Provide data on ICT assets and equipment within government

Stakeholder	Examples	General roles and responsibilities	Role in data and statistics
	Communications Authority of Kenya (CA)	Regulation of ICT and telecommunications sector; licensing and compliance monitoring	Provide data on ICT operators and device penetration
	Kenya Revenue Authority (KRA)	Monitoring imports and exports of electrical and electronic equipment; enforcement of customs regulations and international conventions	Provide customs data on imports and exports of electrical and electronic equipment
	Kenya Ports Authority (KPA)	Verification of imports and exports; identification of high-risk shipments; facilitation of port operations	Provide data on transboundary flows of EEE and e-waste through ports
Producers & Retailers	Safaricom; Philips; Samsung; TotalEnergies; Carrefour	Production, import, and sale of EEE; participation in EPR schemes; financing of take-back systems	Provide data on product sales, imports, take-back schemes, and recycling contributions
Collectors, Recyclers, Refurbishers, Importers & Exporters	WEEE Centre; Enviroserve; Ifix; Sinomet Kenya; E-waste Kenya	Collection, sorting, refurbishment, recycling, material recovery, and management of e-waste flows; participation in transboundary movements in compliance with regulations	Provide operational data on quantities collected, processed, refurbished, recycled, and traded

Domestic regulations and policies

Historically, e-waste in Kenya has been governed through broader environmental and waste management legislation rather than dedicated e-waste regulations. The Environment Management and Coordination Act (EMCA), 1999 (as amended in 2015), provides the overarching legal framework for environmental management while establishing NEMA as the lead regulatory body governing environmental management. The Environmental Management and Co-ordination (Waste Management) Regulations, 2024, update and expand the earlier 2006 regulations by strengthening requirements for waste handling, transport, segregation, and disposal through revised licensing and operational standards, standardised waste segregation, a national waste information system, and enhanced compliance provisions. The National Solid Waste Management Strategy (2015) identified e-waste as a priority waste stream.

Other reforms, notably the Sustainable Waste Management Act (2022), have introduced a framework for waste management including provisions for waste minimisation, segregation, and recovery, while defining roles of national and county governments in managing waste. Section 13 of the Act subsequently provided the legal basis for the Sustainable Waste Management (Extended Producer Responsibility) Regulations, 2024. The regulations define five product categories EPR applies to, namely non-hazardous packaging, hazardous product packaging, EEE (including batteries and mercury-containing components), end-of-life vehicles, and other non-packaging products.

These environmental laws have been steered by national strategies that guide implementation at sectoral and county levels, as well as broader policy frameworks such as the Green Economy Strategy and Implementation Plan (GESIP) 2016–2030. Key instruments regulating waste generally in Kenya are summarised in Table 3.

Table 3. General environmental management regulations and policies

Legislation / Instrument	Year	Description
Vision 2030	2008	National development blueprint promoting sustainable environmental management, including improved waste management, pollution control, and reduction of environment-related health risks.
Constitution of Kenya	2010	Establishes the right to a clean and healthy environment (Article 42), defines State obligations for environmental protection and sustainable resource use (Article 69), provides mechanisms for enforcement (Article 70), and regulates agreements relating to natural resources (Article 71).
Environment Management and Coordination Act (EMCA) (revised 2015)	1999, 2015	Principal framework law for environmental management in Kenya. Establishes the institutional structure for environmental governance, including NEMA, and provides for environmental impact assessment, pollution control, and biodiversity conservation. The 2015 revision amended EMCA to strengthen environmental governance, including provisions restricting the importation of hazardous and other wastes for final disposal.
Environmental Management and Co-ordination (Waste Management) Regulations 2024	2006, 2024	Updated regulatory framework for waste management, building on the 2006 regulations that established standards and licensing procedures for waste handling, transport, and disposal. Introduces standardised waste segregation (national colour-coding), a national waste information system, revised licensing requirements and fees, exemptions for specified non-hazardous wastes, and strengthened compliance provisions, including provisions applicable to hazardous waste streams such as e-waste.
National Solid Waste Management Strategy	2015	Strategic framework guiding county-level waste management implementation, establishing minimum standards and identifying e-waste as an emerging priority waste stream.
Public Procurement and Asset Disposal Act	2015	Provides procedures governing the disposal of public assets, including electronic equipment, through competitive tendering and other accountability mechanisms.
Sustainable Waste Management Policy (2021) and Act (2022)	2021, 2022	Provides a comprehensive legal and institutional framework for waste management, including waste minimization, segregation at source, recovery, and environmentally sound disposal. Section 13 of the Sustainable Waste Management Act provides the basis for the establishment of the EPR regulations.
Sustainable Waste Management (Extended Producer Responsibility) Regulations	2024	Operationalizes EPR introduced under the 2022 Sustainable Waste Management Act by mandating producer responsibility across the product lifecycle, including collection, recycling, reporting, and compliance mechanisms.
Green Economy Strategy and Implementation Plan (GESIP)	2016-2030	National policy framework promoting low-carbon, resource-efficient, and inclusive development, including circular economy approaches and sustainable consumption and production.
Industrialisation Policy Framework	2012-2030	Framework for industrial transformation and manufacturing development, promoting value addition, cleaner production, and resource-efficient industrial growth.
National Circular Economy Strategy and Implementation Plan (CESIP)	2026	National framework promoting circular economy approaches through resource efficiency, waste minimization, reuse, repair, recycling, and value recovery across key sectors.

E-waste-specific policies and regulation

Dedicated e-waste regulation remains relatively uncommon across Africa, with only nine countries reported to have adopted national e-waste legislation or regulations (Baldé et al., 2024). In Eastern Africa, Rwanda, Uganda, and the United Republic of Tanzania have enacted dedicated frameworks. In Kenya, draft Environmental Management and Co-ordination (E-Waste Management) Regulations were prepared in 2013 but were not formally enacted. Consequently, e-waste management has historically been governed primarily through broader waste management legislation and strategies, alongside a series of technical guidelines and policy, although this has begun to change in recent years through the development of e-waste-specific legislative and regulatory instruments. Some counties, such as Machakos, have also introduced localized instruments addressing e-waste management in the past.

The Guidelines for E-waste Management in Kenya (2010), issued by NEMA, provided the country's first dedicated technical guidance for the handling, storage, and disposal of e-waste in the absence of a dedicated regulatory framework. The guidelines outlined recommended responsibilities across the value chain, including take-back systems for producers and importers, standards of compliance, and environmentally sound recycling and disposal practices. They also emphasized the roles of government oversight, consumer awareness, and the integration of the informal sector, and served as a precursor to the development of subsequent regulatory instruments. In 2025, NEMA published the *E-waste management in Kenya simplified guidelines*, building on the initial e-waste guidelines developed in 2010.

The *National E-waste Management Strategy (2019–2024)*, building on the earlier technical guidelines issued by NEMA in 2010, further defines institutional roles and priority actions for e-waste management in an attempt to foster collaboration among key players in the industry. Together, these instruments provided policy direction and technical guidance but did not establish a dedicated regulatory regime for e-waste. This is now changing through the development of dedicated e-waste regulatory instruments, including the draft Electrical and Electronic Waste Management Regulations (2025) and the proposed Electronic Equipment Disposal, Recycling and Reuse Bill (2025). Kenya introduced restrictions on the importation of certain categories of used electronic equipment in 2020 however, enforcement remains uneven and certain product categories are not fully controlled. Regulations and guidelines specific to e-waste management are summarised in Table 4.

Table 4. E-waste regulations and guidelines

Legislation / Instrument	Year	Description
Guidelines for E-waste Management in Kenya	2010	Technical guidance issued by NEMA to support the handling, storage, and disposal of e-waste prior to the development of dedicated regulatory instruments.
Environmental Management and Co-ordination (E-Waste Management) Regulations (Draft)	2013	Draft regulations prepared by NEMA to establish a dedicated legal and institutional framework for e-waste management, including collection, transport, recycling, and environmentally sound disposal; not formally enacted.
National E-waste Management Strategy	2019-2024	Five-year strategic plan outlining institutional roles and priority actions for e-waste management, including policy development, infrastructure strengthening, awareness-raising, resource mobilization, and monitoring and evaluation.
E-waste management in Kenya simplified guidelines	2025	Updated technical guidelines building on the initial 2010 national e-waste guidelines, establishing clear roles, procedures, and compliance responsibilities for all stakeholders across the e-waste value chain. It provides a comprehensive framework for the collection, sorting, storage, transportation, recycling, and disposal of e-waste.
(Draft) Electrical and Electronic Waste Management Regulations	2025	Seeks to establish a dedicated regulatory framework for the management of e-waste, including provisions related to collection, transportation, storage, refurbishment, recycling, recovery, treatment, and environmentally sound disposal, as well as stakeholder responsibilities and compliance requirements.
Electronic Equipment Disposal, Recycling, and Reuse Bill	2025	Proposed legislation intended to strengthen the legal framework for electronic equipment disposal, recycling, refurbishment, reuse, and resource recovery, while clarifying institutional responsibilities and promoting environmentally sound management of e-waste.

Applicable international and regional conventions

Kenya is party to several international and regional agreements relevant to environmental management, including those addressing hazardous waste and e-waste. Kenya ratified the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal in May 2000, and it entered into force for the country in August 2000. The Convention aims to regulate and reduce transboundary movements of hazardous waste and promote environmentally sound management. Kenya also ratified the Basel Convention Ban Amendment on 9 September 2009. This Amendment, which entered into force on 5 December 2019, prohibits the export of hazardous waste from developed to developing countries and countries with economies in transition.

At the regional level, Kenya is a signatory to the Bamako Convention but has not ratified it. The Convention seeks to prohibit the import of hazardous waste into Africa and regulate its movement within the continent. Kenya is also a party to the Nairobi Convention, which supports regional cooperation on pollution control, and the Stockholm Convention, which addresses persistent organic pollutants (POPs). Kenya is a member of the East African Communications Organisation (EACO), established in 2012. EACO brings together ICT regulators and stakeholders from East African Community member states. In response to growing e-waste challenges, it adopted a Regional E-waste Management Strategy (2022–2027), which aims to harmonize policy and regulatory frameworks, strengthen regional infrastructure, and improve coordination on transboundary e-waste management. Other relevant multilateral environmental agreements to which Kenya is a party are summarised in Annex A.

CURRENT E-WASTE STATISTICS PRODUCTION AND LINKS TO SDG REPORTING

Since 2022 and under the auspices of the Global E-waste Statistics Partnership, the United Nations Institute for Training and Research (UNITAR), in collaboration with the International Telecommunication Union (ITU) and the East African Communications Organisation (EACO), has supported six beneficiary countries in East Africa (Uganda, South Sudan, Rwanda, the United Republic of Tanzania, Kenya and Burundi) in developing national e-waste statistics. This support includes the provision of tools for estimating EEE placed on the market (POM) and e-waste generation, as well as targeted training workshops to strengthen national capacity for data compilation and reporting, aligned with the methodologies of the Global E-waste Monitor and relevant SDG indicators.

A regional technical report published in 2023 provided methodological guidance, data collection templates, and institutional recommendations to support the sustained production of e-waste statistics as well as presenting results from a cross-country survey on possession rates, waste generation, and disposal behaviours (ITU and UNITAR, 2023). A key milestone was the publication of official e-waste statistics in the Kenya Economic Survey 2025, marking the first time national e-waste data had been incorporated into Kenya's official statistical reporting system. The publication of official statistics provides an important baseline for monitoring progress towards national e-waste management, circular economy, and EPR objectives.

The International Workshop Series on E-waste Statistics held in Nairobi in April 2025 further advanced national estimation practices by supporting the application of updated methodological inputs, including updated trade classifications and product lifespan assumptions, in line with the *E-waste Statistics Guidelines*, third edition, as well as expansion to track e-waste associated with photovoltaic (PV) panels. In support of official e-waste statistics production, Kenya has several public data sources relevant to EEE and e-waste, as outlined in Table 5.

Monitoring of e-waste supports international reporting of progress against the Sustainable Development Goals (SDGs). Several SDGs are relevant to e-waste, most directly SDG 12 on sustainable consumption and production. Under SDG Indicator 12.4.2 on hazardous waste management, covering (a) hazardous waste generated per capita and (b) the proportion of hazardous waste treated—e-waste data can be reported through the following series:

- **EN_EWT_GENV** – Electronic waste generated (tonnes)
- **EN_EWT_GENPCAP** – Electronic waste generated per capita (kg)

Additional sub-indicators under Indicator 12.4.2 capture collection performance:

- **EN_EWT_COLLV** – Electronic waste collected (tonnes)
- **EN_EWT_COLLPCAP** – Electronic waste collected per capita (kg)
- **EN_EWT_COLLR** – Proportion of electronic waste collected (%)

Although e-waste may be classified as hazardous or non-hazardous depending on its composition, it is commonly reported under Indicator 12.4.2 in line with the precautionary principle. E-waste is also relevant to SDG Indicator 12.5.1 on national recycling rates, with the following sub-indicators:

- **EN_EWT_RCYV** – Electronic waste recycled (tonnes)
- **EN_EWT_RCYPCAP** – Electronic waste recycled per capita (kg)
- **EN_EWT_RCYR** – Proportion of electronic waste recycled (%)

For countries outside Eurostat and OECD reporting frameworks, including Kenya, e-waste data are primarily reported through the biennial UNSD/UNEP Questionnaire on Environment Statistics which includes modules on e-waste generation and collection.

Table 5. Public sector data holders relevant to EEE and e-waste

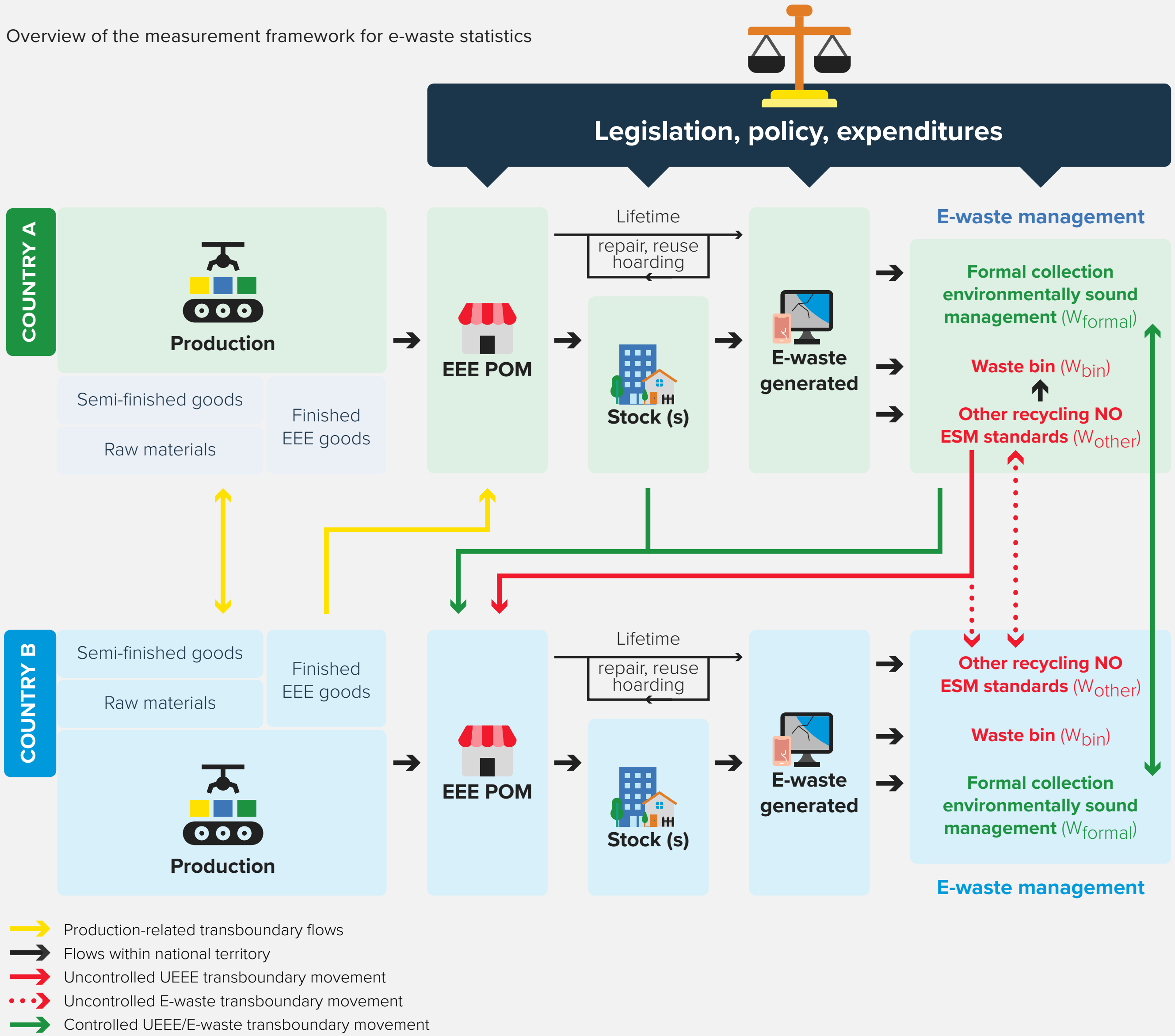
Agency/Bodies	Description
Kenya National Bureau of Statistics (KNBS)	• *Economic Surveys 2025* and 2026 includes e-waste generation data (2020–2025) • Key datasets published relevant to e-waste: • Kenya National Data Archive (KeNADA) ° FinAccess Household Survey ° Kenya Integrated Household Budget Survey (KIHBS) includes questions on household waste disposal ° Kenya Demographic and Health Survey (KDHS)
National Environment Management Authority (NEMA)	• Key resources include: ° Environmental Impact Assessment (EIA) reports ° Regulatory Impact Assessment (RIA) for draft 2025 e-waste regulations ° Registry of licensed e-waste recyclers • Supports analysis of formal collection systems and treatment
Communications Authority of Kenya (CA)	• Regulates telecommunications, broadcasting, cybersecurity, and e-commerce • Publishes annual reports with data on ICT penetration, device subscriptions, and infrastructure
Kenya Trade Network Agency (KenTrade)	• Manages the National Electronic Single Window System (Trade Facilitation Platform) • Provides HS-coded trade data to enable estimation of EEE imports/exports and POM based on the apparent consumption method
Business Registration Service (BRS)	• Maintains registry of companies and business entities • Data can support modelling of EEE stocks in commercial and industrial sectors

Chapter 2. Methodology

OVERVIEW OF THE MEASUREMENT FRAMEWORK

The methodology applied in this report follows the UNITAR *E-waste Statistics: Guidelines on Classification, Reporting and Indicators* (Baldé et al., 2015; Forti et al., 2018; Lysaght et al., 2026). The guidelines provide a standardised framework for quantifying the lifecycle of EEE, including quantities placed on the market, in-use stocks, e-waste generation, collection, treatment, and transboundary movements (Figure 6).

Figure 6. Overview of the measurement framework for e-waste statistics



CLASSIFYING E-WASTE

E-waste statistics require EEE to be classified into standardised product groups to which trade data, product lifetimes, and material composition profiles can be linked. This report applies the internationally recognised UNU-KEYs classification as defined in the *E-waste Statistics Guidelines* for this purpose. In particular, the UNU-KEYs Version 2, which comprises 57 product categories and reflects recent developments in EEE markets, including products such as servers, electric vehicle chargers, and e-cigarettes.

The UNU-KEY classification has been linked to other international classification systems used in e-waste reporting, including the Waste CAT classification that KNBS uses to present figures on e-waste generation in the *Economic Survey*. Results in this report are also presented according to these groupings (column 3 of Table 6).

Table 6. Descriptions of the UNU-KEYs Version 2 categories and their links to the Waste CAT categories (continues on next page)

UNU KEY	UNU KEY DESCRIPTION	E-WASTE CATEGORY
0001	Central Heating (household-installed)	Large equipment (excl. photovoltaic panels)
0002	Photovoltaic Panels (incl. inverters)	Photovoltaic panels (incl. inverters)
0101	Professional Heating & Ventilation (excl. cooling equipment)	Large equipment (excl. photovoltaic panels)
0102	Dishwashers	Large equipment (excl. photovoltaic panels)
0103	Kitchen equipment (e.g. large furnaces, ovens, cooking equipment)	Large equipment (excl. photovoltaic panels)
0104	Washing Machines (incl. combined dryers)	Large equipment (excl. photovoltaic panels)
0105	Dryers (incl. centrifuges)	Large equipment (excl. photovoltaic panels)
0106	Household Heating & Ventilation (e.g. hoods, ventilators, space heaters)	Large equipment (excl. photovoltaic panels)
0108	Refrigerators (incl. combi-refrigerators)	Temperature exchange equipment
0109	Freezers	Temperature exchange equipment
0111	Air Conditioners (household installed and portable)	Temperature exchange equipment
0112	Other Cooling equipment (e.g. dehumidifiers, heat pump dryers)	Temperature exchange equipment
0113	Professional Cooling equipment (e.g. large air conditioners, cooling displays)	Temperature exchange equipment
0114	Microwaves (incl. combined, excl. grills)	Small equipment
0201	Other small household equipment (e.g. small ventilators, irons, clocks, adapters)	Small equipment
0202	Equipment for food preparation (e.g. toaster, grills, food processing, frying pans)	Small equipment

UNU KEY	UNU KEY DESCRIPTION	E-WASTE CATEGORY
0203	Small household equipment for hot water preparation (e.g. coffee, tea, water cookers)	Small equipment
0204	Vacuum Cleaners (excl. professional)	Small equipment
0205	Personal Care equipment (e.g. toothbrushes, hair dryers, razors)	Small equipment
0301	Small IT equipment (e.g. routers, mice, keyboards, external drives & accessories)	Small IT
0302	Desktop PCs (excl. monitors, accessories)	Small IT
0303	Laptops (incl. tablets)	Screens and monitors
0304	Printers (e.g. scanners, multi-functionals)	Small IT
0305	Telecommunications equipment excl. mobile phones	Small IT
0306	Mobile Phones (incl. smartphones, pagers)	Small IT
0307	Other IT equipment (e.g. data storage, copiers)	Large equipment (excl. photovoltaic panels)
0308	Cathode Ray Tube Monitors	Screens and monitors
0309	Flat-Panel Display Monitors (LCD, LED)	Screens and monitors
0310	Servers	Small IT
0401	Small Consumer Electronics (e.g. headphones, cameras, remote controls)	Small equipment
0402	Portable Audio & Video (e.g. MP3, e-readers, car navigation)	Small equipment
0403	Music Instruments, Radio, Hi-Fi (incl. audio sets)	Small equipment
0404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes) and projectors	Small equipment
0405	Speakers	Small equipment
0407	Cathode Ray Tube Televisions (TVs)	Screens and monitors
0408	Flat-Panel Display Televisions (TVs) (LCD, LED, Plasma)	Screens and monitors
0409	E-cigarettes and other electronic vaporising devices	Small equipment
0501	Small lighting equipment (excl. LED & incandescent)	Small equipment
0502	Compact Fluorescent Lamps (incl. retrofit & non-retrofit)	Lamps
0503	Straight Tube Fluorescent Lamps	Lamps
0504	Special Lamps (e.g. professional mercury, high- & low-pressure sodium)	Lamps
0505	LED Lamps (incl. retrofit LED lamps)	Lamps
0506	Household Luminaires (incl. household incandescent fittings & household LED luminaires)	Small equipment
0507	Professional Luminaires (offices, public space, industry)	Small equipment
0601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	Small equipment
0602	Professional Tools (e.g. for welding, soldering, milling)	Large equipment (excl. photovoltaic panels)
0701	Toys (e.g. car racing sets, electric trains, music toys, biking computers, drones)	Small equipment
0702	Game Consoles	Small IT
0703	Leisure equipment (e.g. sports equipment, juke boxes) excl. electric bikes	Large equipment (excl. photovoltaic panels)
0704	E-bikes	Large equipment (excl. photovoltaic panels)
0705	Charging stations	Large equipment (excl. photovoltaic panels)
0801	Household medical equipment (e.g. thermometers, blood pressure meters)	Small equipment
0802	Professional Medical equipment (e.g. hospital, dentist, diagnostics)	Large equipment (excl. photovoltaic panels)
0901	Household Monitoring & Control equipment (e.g. alarm, heat, smoke, excl. screens)	Small equipment
0902	Professional Monitoring & Control equipment (e.g. laboratory, control panels)	Large equipment (excl. photovoltaic panels)
1001	Non-cooled Dispensers (e.g. for vending, hot drinks, tickets, money)	Large equipment (excl. photovoltaic panels)
1002	Cooled Dispensers (e.g. for vending, cold drinks)	Temperature exchange equipment

CALCULATION STEPS AND DATA SOURCES

Electrical and electronic equipment (EEE) placed on the market (POM)

Variable definition: “Placed on the market” (POM) refers to the quantity of EEE supplied for distribution, consumption, or use in Kenya each year, whether sold or provided free of charge.

Data sources and calculation steps: EEE POM is estimated using the apparent consumption method, where POM equals domestic production plus imports minus exports. As comprehensive national production statistics for EEE are not available for Kenya, POM is calculated based on trade data.

$$\mathrm{POM(t) = Imports(t) - Exports(t)}$$

Import and export data for 2010-2025 were obtained from KNBS based on KRA customs records, while data for 1980-2009 were retrieved from UN Comtrade. Trade data classified according to the Harmonized System (HS) were mapped to UNU-KEY categories using a HS–UNU-KEY correspondence table.

As PV trade data has not been reliably identifiable in the past through customs classifications alone, POM for PV panels was estimated separately using installed capacity data from Energy and Petroleum Regulatory Authority (EPRA)[10], converted to tonnages using mass-per-capacity conversion factors (kg/MW) published by UNITAR.

Table 7. EEE POM data sources and inputs

INPUT	SOURCE	TEMPORAL COVERAGE
Trade data	KRA and KNBS	2010–2025
Trade data	UN Comtrade	1995–2009
UNU-KEY–HS correlation table	UNITAR	1995–2025
Solar PV installed capacity data	EPRA	2015–2025
Conversion factors (kg/MW and unit-to-mass)	UNITAR	2015–2025

E-waste generated

Variable definition: E-waste generated refers to the mass of discarded EEE resulting from equipment reaching end-of-life following use within national territory and prior to any collection, reuse, treatment, or export. Product lifespan refers to the period between placement on the market and final discard, including periods of reuse, second-hand exchange, and stockpiling.

Data sources and calculation steps: E-waste generation is estimated by combining the historical time series of EEE POM with product lifetime distributions published in the *E-waste Statistics Guidelines*. Lifetime distributions are defined using a two-parameter Weibull distribution, specified by UNU-KEY category. The quantity of e-waste generated in year n is calculated as the sum of past POM multiplied by the probability that products making up each historic cohort reach end-of-life in that year, as shown below.

$$\mathrm{E - waste(n)} = \sum_{\mathrm{t=t_0}}^{\mathrm{n}} \mathrm{POM(t) \times f(n - t)}$$

Where $POM(t)$ is the quantity of EEE placed on the market in year t, t_0 is the first year of the time series, and $f(n-t)$ represents the probability that products sold in year t reach end-of-life in year n. To align with KNBS published statistics, EEE POM calculated using the UNU-KEYs V1 is used as the basis for the waste generated figures up to 2024, while estimates for 2025 are based on the UNU-KEYs Version 2.

[10] Gap-filled where necessary to produce a consistent time-series.

Table 8. E-waste generated data sources and inputs

INPUT	SOURCE	TEMPORAL COVERAGE
EEE POM	Defined in Table 7	1980–2025
Product lifetime distributions	E-waste Statistics Guidelines, second and third editions	1980–2025

The material makeup of e-waste in 2025 is presented based on composition data included in the E-waste Statistics Guidelines Edition 3.

EEE Stocks

Variable definition: The stock refers to the quantity of EEE remaining in use or stored within households, businesses, and the public sector.

Data sources and calculation steps: The stock in year n, $S(n)$, is calculated as the sum of historical POM minus cumulative waste generation up to that year.

$$S(n) = \sum_{t=t_0}^{n} POM(t) - \sum_{t=t_0}^{n} E - \text{waste generated}(t)$$

Table 9. EEE stocks data sources and inputs

INPUT	SOURCE	TEMPORAL COVERAGE
EEE POM	Defined in Table 7	1980–2025
E-waste generated	Defined in Table 8	1980–2025

The EEE stock estimates were cross-checked against appliance ownership data published by UNICEF and KNBS.

Collection and disposal pathways

Variable definition: E-waste may follow multiple pathways after disposal, including entering formal collection and treatment[11] systems, diversion to other recycling streams, disposal in mixed municipal waste, or pathways that remain undocumented. The relationship between total e-waste generated and treatment routes can be represented using a mass balance framework:

$$E - \text{waste}(n) = W_{\text{formal}} + W_{\text{others}} + W_{\text{bin}} + W_{\text{gap}}$$

where W_{formal} represents e-waste collected through regulated systems, including exports for treatment under equivalent standards; W_{others} refers to diversion to other recycling streams; W_{bin} captures disposal in mixed waste; and W_{gap} represents flows with unknown treatment pathways.

Data sources and approach: Disposal pathways were estimated using responses from household and business surveys conducted as part of the 2023 ITU and UNITAR EACO report, which collected information on how discarded EEE items were managed following disposal. Separate disposal pathway distributions were derived for household and non-household respondents and consolidated into a standardised set of end-of-life categories aligned with the e-waste statistics framework.

Estimated e-waste generation was combined with survey-derived disposal pathway shares to estimate flows through different treatment routes. To improve representativeness, county-level differences in urbanisation and likely access to disposal pathways were accounted for when applying survey results nationally. Formal collection estimates were cross-checked against survey data collected from e-waste recyclers by UNITAR in 2025 and wider literature. Detailed methodological assumptions, estimation procedures, and pathway allocation methods are provided in Annex B.

[11] The quantity of e-waste collected through officially designated systems operating under environmental regulations. This includes e-waste collected domestically and subsequently exported for treatment under equivalent standards.

Transboundary movement of used EEE and e-waste

Variable definition: In line with the Basel Convention, transboundary movement refers to the movement of used electrical and electronic equipment (UEEE), e-waste, and related waste streams across national borders, including transit through third countries. This includes both controlled movements of hazardous e-waste subject to notification procedures and broader reported trade flows of electrical and electronic waste and scrap.

Data sources and approach: Transboundary flows are presented using data reported under the Basel Convention and international merchandise trade statistics. Basel Convention reporting data were used to identify controlled movements of hazardous e-waste between Kenya and other countries. To capture additional reported cross-border flows, trade data from UN Comtrade were analysed using Harmonized System (HS) code 8549 ("electrical and electronic waste and scrap"), introduced by the World Customs Organization in 2022.

As HS 8549 is structured primarily around material composition rather than product categories, these data cannot be directly mapped to UNU-KEY classifications. Basel and trade data were therefore integrated at an aggregate level to estimate imports and exports of e-waste and related scrap materials. No separate estimate of undocumented or uncontrolled transboundary flows of UEEE or e-waste was made, though a qualitative summary is provided. As a result, transboundary flows are likely to be underestimated.

National mass balance

A national mass balance was produced to bring together the quantified flows of EEE and e-waste into an integrated picture, including by Waste CAT category. The mass balance integrates estimates of EEE POM, stocks, e-waste generation, disposal pathways, formal collection and recycling, and transboundary movements developed in this report.

E-waste generation was allocated across collection pathways using the standardised disposal pathway categories derived from the EACO household and business survey. Formal collection and recycling comprised material delivered to dedicated e-waste collection systems together with material transferred from informal collectors to formal recyclers. Based on a survey of recyclers conducted as part of this study, additional material equivalent to 31 per cent of the quantity entering formal collection systems was assumed to be supplied through informal collection channels.

Exports were estimated as the sum of reported exports of relevant e-waste commodities in UN Comtrade data for 2024 and Basel Convention waste streams reported under codes A1170, A1180 and A1190 for 2020. As more recent Basel reporting was not available, the latest reported Basel export quantity was combined with the 2024 UN Comtrade data to provide an indicative estimate of transboundary e-waste exports for the 2025 mass balance. Export quantities were allocated across equipment categories in proportion to the composition of material entering the formal collection and recycling system, with the remainder assumed to undergo environmentally sound domestic recycling.

To estimate quantities entering non-environmentally sound recycling, metal content factors were applied to e-waste collected through mixed waste and other collection pathways. Recovered metals were assumed to enter informal or other non-environmentally sound recycling activities, while remaining materials and unmanaged flows were assumed to enter the waste bin.

Financing requirements

For the section on financing requirements for scaling up environmentally-sound e-waste management, an ex-ante analysis was performed for years 2026-2040. As part of this, future e-waste generation was projected under two EEE POM scenarios: (i) a constant per-capita consumption scenario, in which EEE consumption grows in line with population growth, and (ii) a Random Walk with Drift (RWD) scenario, which extrapolates historical trends in per-capita EEE consumption. Both scenarios were combined with World Bank population projections to estimate EEE POM until 2040 and converted to e-waste generation estimates using lifetime-based modelling.

Financing requirements were estimated based on the additional quantities of e-waste that would need to be collected and treated under alternative formal collection targets. Two collection scenarios were modelled: 25 per cent and 40 per cent formal collection by 2040, with collection rates assumed to increase linearly between 2026 and 2040.

Treatment-stage capital expenditure (CAPEX) requirements were estimated using benchmark cost factors for premises and equipment. Premises costs were based on a benchmark e-waste recycling facility in Rwanda with a reported capital cost of USD 1.5 million for 15 kt of annual treatment capacity. Capacity requirements were scaled to reflect the structure of Kenya's recycling sector, where treatment activities are distributed across multiple operators. Equipment costs were estimated using a benchmark cost of USD 500,000 per processing line, with equipment requirements derived from assumptions regarding the number of processing lines required across large, medium, and small recycling operators. New premises were assumed to be required only for major recycling operators, while equipment investments were assumed to occur across both major recyclers and smaller entities.

Operating expenditure (OPEX) requirements were estimated using treatment cost data derived from a survey of recyclers, and with a range from KES 100,000–150,000 per tonne treated (approximately USD 775–1,163 per tonne).

The potential value of recovered materials was estimated by applying equipment-category-specific material composition factors and representative metal prices to projected quantities collected under each scenario. Estimates are presented in nominal terms and do not account for inflation or future commodity price changes.

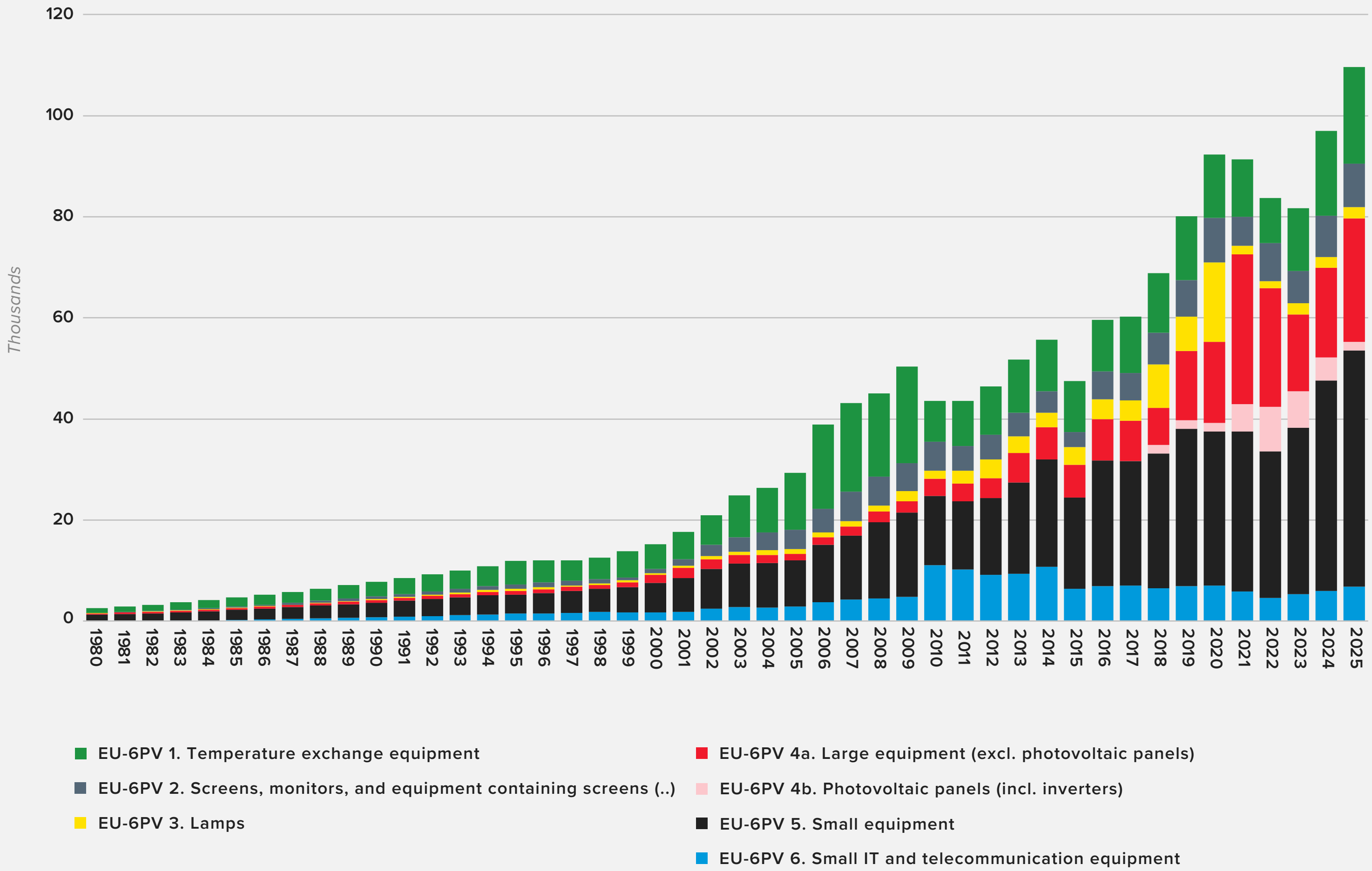
Chapter 3.
Key statistics on e-waste in Kenya and its management

EEE POM

The annual quantity of EEE POM in Kenya rose from 2.6 kt in 1980 to 109.6 kt in 2025,[12] with growth accelerating after the early 2000s alongside increased electrification, ICT adoption, household appliance ownership, and expansion of consumer electronics markets (Figure 7). Small equipment accounted for the largest share of EEE POM in 2025 at 46.7 kt (42 per cent), followed by large equipment excluding photovoltaic (PV) panels at 24.3 kt (22 per cent) and temperature exchange equipment at 19.1 kt (17 per cent).

Small equipment experienced the strongest and most sustained growth across this period, increasing from 1.3 kt in 1980 to 46.7 kt in 2025 and becoming the dominant category after 2010. Temperature exchange equipment rose from 0.95 kt to 19.1 kt over the same time, while screens and monitors increased from 0.03 kt to 8.6 kt, reflecting growing demand for televisions, computers, and other display devices. Large equipment expanded from 0.23 kt in 1980 to 24.3 kt in 2025, with growth accelerating particularly after 2015. PV panels emerged as a significant category after 2015, peaking at 8.9 kt in 2022 before declining to 1.8 kt in 2025, reflecting fluctuations in solar energy deployment.

Figure 7. EEE POM, Kenya, 1980-2025, Tonnes



[12] The historical time series is based primarily on the UNU-KEYs Version 1 classification framework; however, from 2019 onwards, additional product categories and revised HS mappings introduced under UNU-KEYs Version 2 were incorporated to improve coverage of emerging technologies and recently introduced trade codes.

E-WASTE GENERATED

The quantity of e-waste generated in Kenya increased from 7.9 kt in 2000 to 56.0 kt in 2025, representing more than a sevenfold increase (Figure 8). Growth was relatively steady throughout the period, accelerating after 2010 as increasing quantities of equipment reached end of life.

Small equipment constituted the largest share of e-waste generated in 2025, accounting for 21.9 kt (39 per cent) of the total, followed by temperature exchange equipment at 11.0 kt (20 per cent) and small IT and telecommunication equipment at 6.6 kt (12 per cent). Screens and monitors generated 6.1 kt (11 per cent), while large equipment excluding photovoltaic (PV) panels and lamps accounted for 5.9 kt (11 per cent) and 4.4 kt (8 per cent), respectively. PV panels remained a negligible component of the waste stream at 3.2 tonnes in 2025, reflecting their relatively recent uptake and longer operational lifetimes.

Households generated an estimated 40.6 kt of e-waste in 2025 (73 per cent of the total), compared with 15.4 kt (27 per cent) generated by businesses and other non-household actors.

Figure 8. E-waste Generated, Kenya, 1980-2025, Tonnes

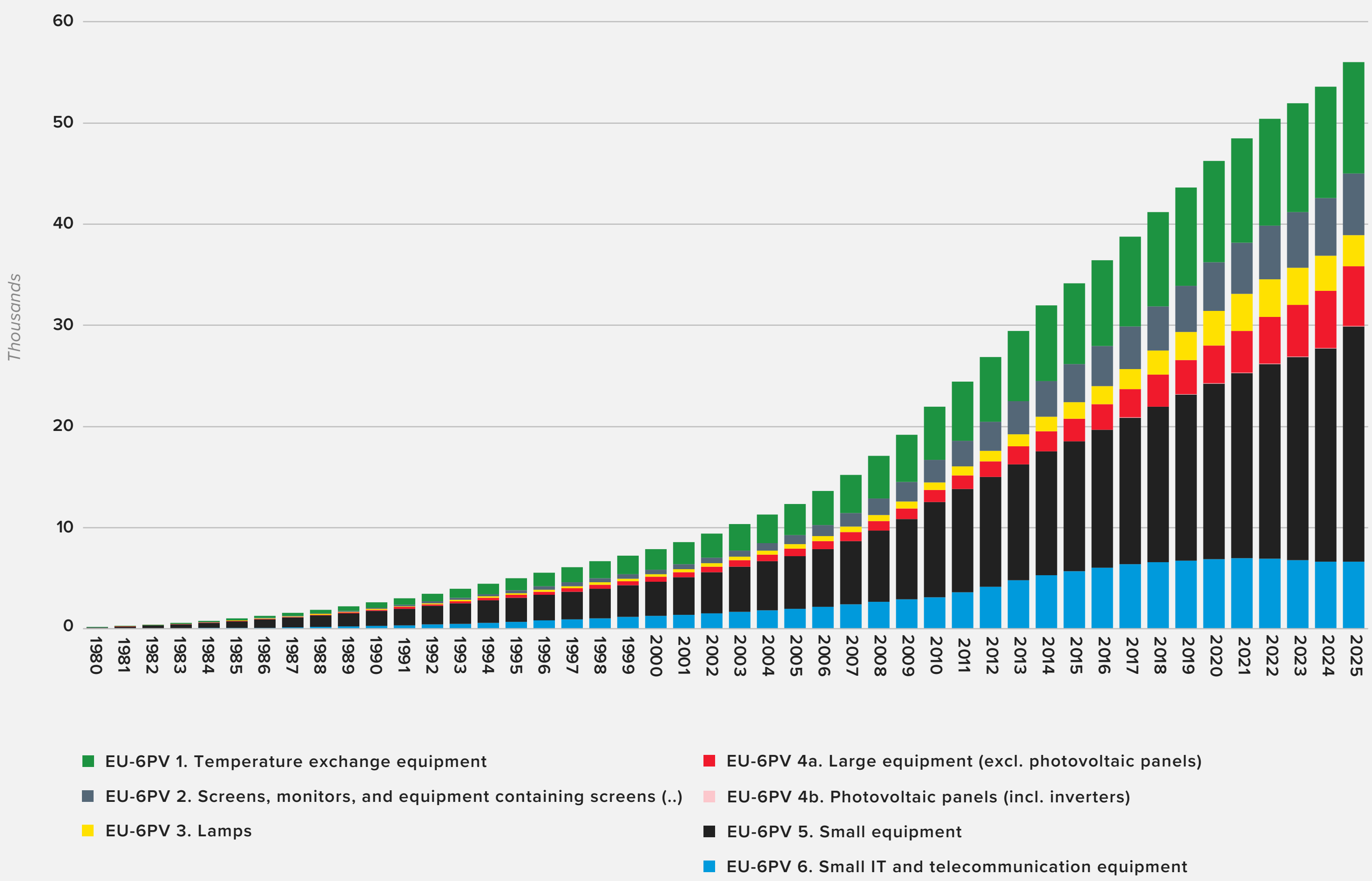
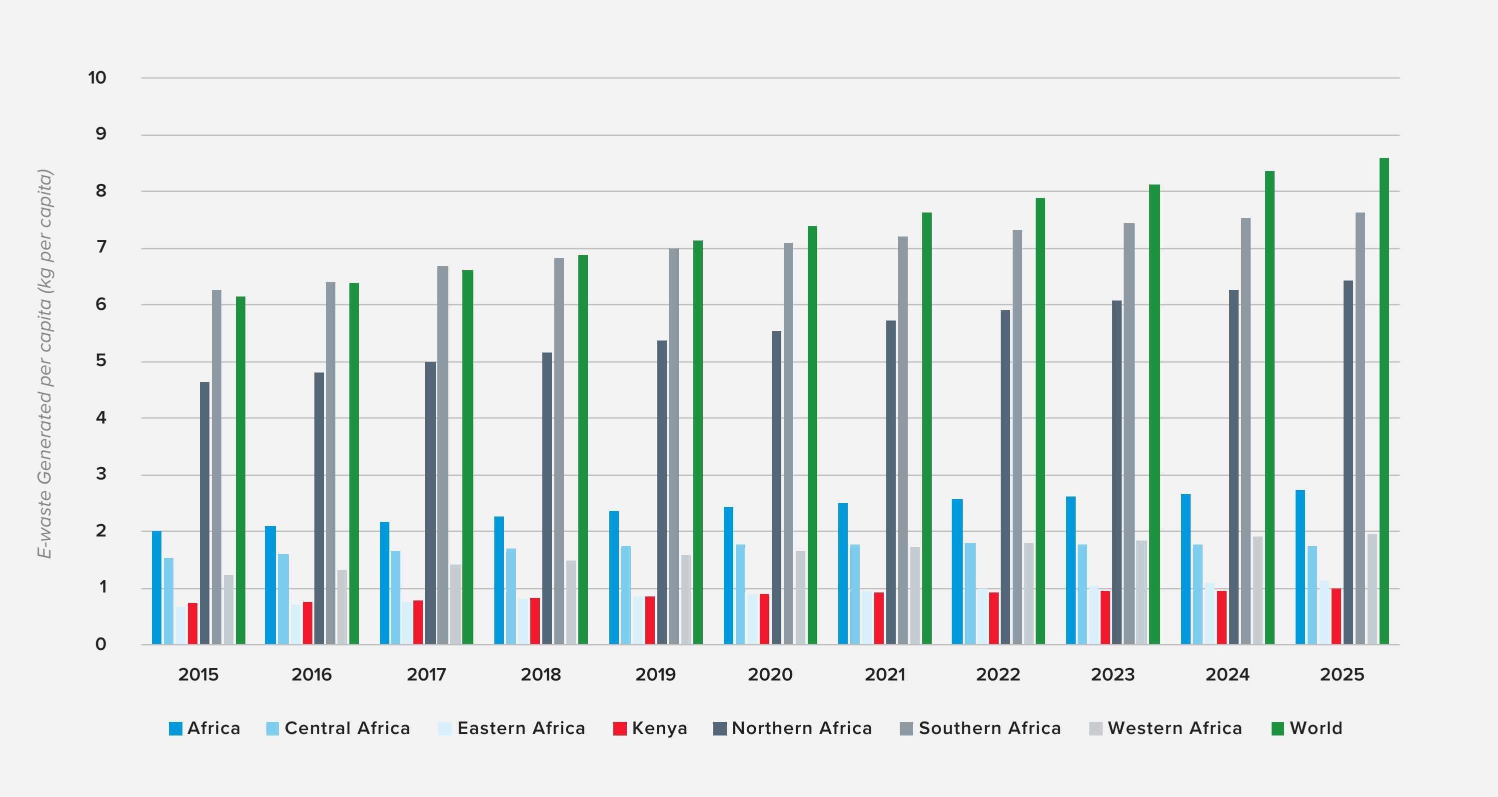


Figure 9. Average per capita e-waste generation for Kenya compared with Africa sub-regions and the world (2024-2025 projected), 2015-2025, kg

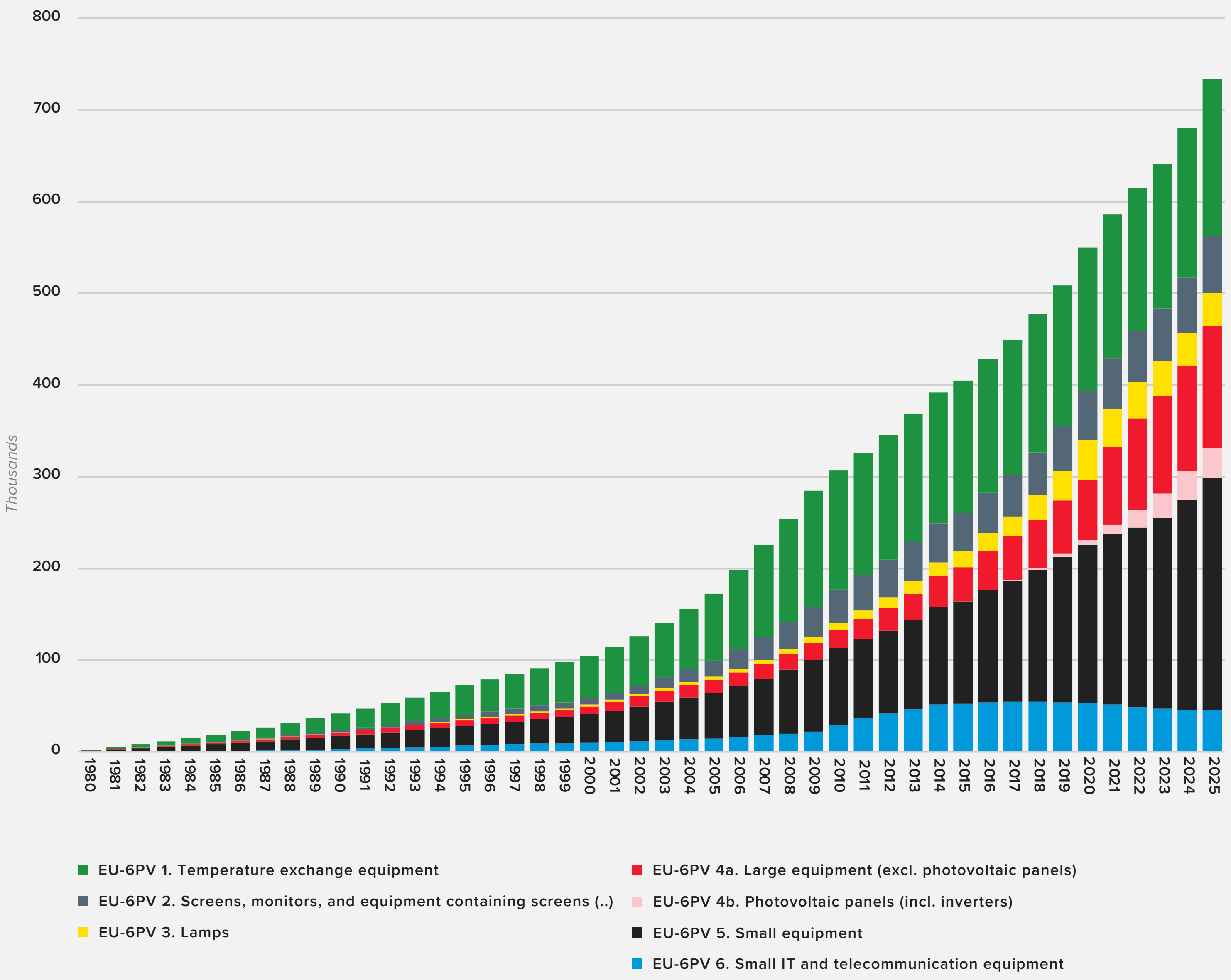


International benchmarking

Per capita e-waste generation in Kenya increased from 0.72 kg in 2015 to 0.98 kg in 2025, following a trajectory similar to that observed across Eastern Africa (Figure 9). In 2025, Kenya generated 0.98 kg of e-waste per capita compared with 1.12 kg in Eastern Africa, indicating broadly comparable levels of e-waste generation within the subregion. Both values were below the African average of 2.72 kg per capita.[13] Kenya's per capita e-waste generation in 2025 further represented only a tenth (11 per cent) of the global average.

[13] These differences should be interpreted with caution as data on domestic production are not available for Kenya. As a result, the reported country figures are structurally lower than the corresponding regional and global estimates, which include estimated domestic production.

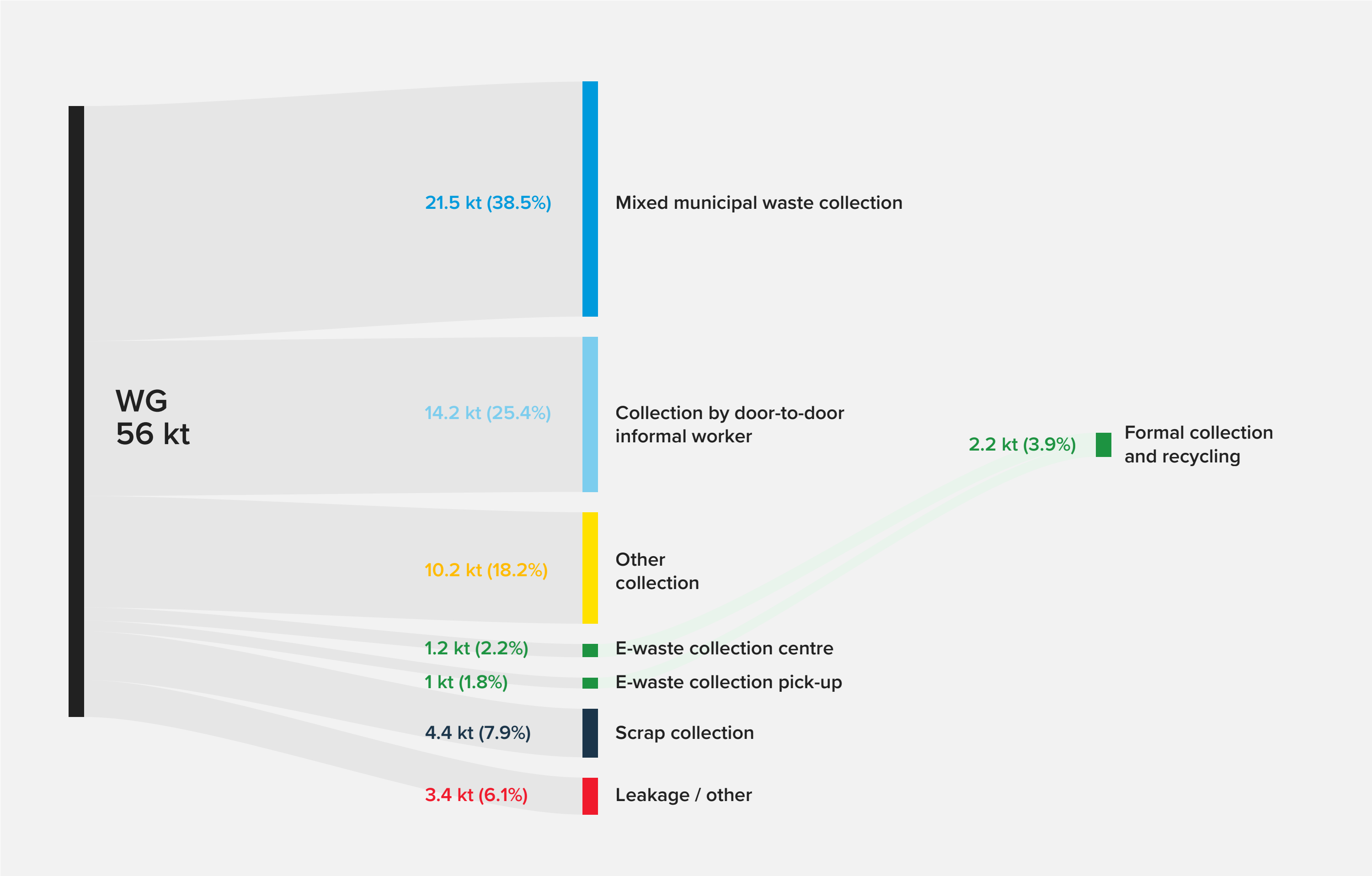
Figure 10. EEE stocks, Kenya, 1980-2025, Tonnes



EEE STOCKS

The stock of EEE in Kenya increased from 104 kt in 2000 to 734 kt in 2025, representing a sevenfold increase over the period (Figure 10). On a per capita basis, this corresponds to approximately 12.9 kg of EEE stock per person in 2025. Small equipment constituted the largest share of EEE stock in 2025 at 253 kt (34 per cent of the total), followed by temperature exchange equipment at 171 kt (23 per cent) and large equipment excluding photovoltaic (PV) panels at 133 kt (18 per cent). Screens and monitors accounted for 62 kt (8 per cent), while small IT and telecommunication equipment reached 46 kt (6 per cent). The composition of EEE stocks reflects the growing penetration of consumer electronics, cooling equipment, and household appliances across Kenya. PV panels, which began appearing in the stock estimates after 2015, reached 33 kt in 2025, highlighting the increasing adoption of solar energy systems.

Figure 11. Disposal routes across all e-waste flows, 2025



COLLECTION AND DISPOSAL PATHWAYS

Responses from the household and business surveys indicate that reuse/resale and stockpiling are common practices in Kenya.[14] Previous studies have similarly identified active second-hand markets, repair cultures, and prolonged storage as important responses to equipment obsolescence (Omari et al., 2016; Ofuya and Mulinge, 2023). Stockpiling has been widely documented, particularly for mobile phones, computers, and off-grid solar products, where non-functioning devices are often retained due to uncertainty around disposal options and limited collection infrastructure (Otieno and Omwenga, 2016; Maimba et al., 2019; Nygaard et al., 2023).

In 2025, e-waste in Kenya was collected through a range of formal and informal pathways, with mixed municipal waste collection accounting for the largest share of estimated flows at 21.5 kt, or 38.5 per cent of estimated e-waste flows, followed by collection by door-to-door informal workers at 14.2 kt (25.4 per cent) (Figure 11). 'Other collection' routes including e-waste being brought to county designated drop-off point or picked up by sellers accounted for a further 10.2 kt (18.2 per cent), while scrap collection represented 4.4 kt (7.9 per cent). Formal e-waste collection pathways remained comparatively limited, with dedicated collection centres and collection pick-up services accounting for 1.2 kt (2.2 per cent) and 1.0 kt (1.8 per cent), respectively. These collection figures understate the role of the formal sector, as additional materials collected by informal actors are subsequently transferred to formal recyclers for processing (see National Mass-Balance). Leakage and unmanaged disposal pathways represented 3.4 kt (6.1 per cent) of total estimated e-waste flows.

[14] These pathways are excluded from the disposal flow estimates presented here to align with the lifespan-based definition of e-waste generation applied in this report, under which products remaining in use, reused, repaired, resold, or stored are considered to remain within the stock rather than entering the waste stream.

Collection pathways differed across product categories (Table 10). Mixed municipal waste collection was the largest pathway for screens and monitors, large equipment, and lamps, while door-to-door informal collection played a particularly important role for temperature exchange equipment, small equipment, and small IT and telecommunication equipment. Formal collection pathways remained limited across all product categories, reaching their highest share for temperature exchange equipment at 6.3 per cent of flows.

Table 10. Waste collection pathways by product category

ROUTE	EU-6PV 1. Temperature exchange equipment	EU-6PV 2. Screens, monitors, and equipment containing screens (..)	EU-6PV 3. Lamps	EU-6PV 4a. Large equipment (excl. photovoltaic panels)	EU-6PV 4b. Photovoltaic panels (incl. inverters)	EU-6PV 5. Small equipment	EU-6PV 6. Small IT and telecommunication equipment	OVERALL
E-waste collection centre	0.64 kt (5.8%)	0.15 kt (2.5%)	0.08 kt (2.6%)	0.17 kt (2.8%)	0.08 t (2.6%)	0.13 kt (0.6%)	0.05 kt (0.7%)	1.21 kt (2.2%)
Collection by door-to-door informal worker	4.45 kt (40.5%)	0.78 kt (12.8%)	0.68 kt (21.9%)	0.38 kt (6.4%)	0.71 t (21.9%)	5.32 kt (22.9%)	2.59 kt (39.2%)	14.20 kt (25.4%)
Scrap collection	1.48 kt (13.5%)	0.31 kt (5.0%)	0.30 kt (9.6%)	0.35 kt (5.8%)	0.31 t (9.6%)	2.01 kt (8.7%)		4.44 kt (7.9%)
Mixed municipal waste collection	0.78 kt (7.1%)	3.48 kt (57.3%)	1.25 kt (40.1%)	3.09 kt (52.2%)	1.29 t (40.1%)	11.44 kt (49.2%)	1.49 kt (22.5%)	21.53 kt (38.5%)
Other collection	3.60 kt (32.7%)	1.04 kt (17.1%)	0.45 kt (14.5%)	1.94 kt (32.7%)	0.47 t (14.5%)	2.14 kt (9.2%)	1.05 kt (15.8%)	10.21 kt (18.2%)
Leakage / other		0.20 kt (3.3%)	0.28 kt (9.1%)		0.29 t (9.1%)	1.57 kt (6.8%)	1.34 kt (20.2%)	3.39 kt (6.1%)

PROFILE OF THE FORMAL E-WASTE RECYCLING SECTOR IN KENYA

Although formal e-waste collection and recycling systems manage a relatively small share of Kenya's e-waste at present, the sector has expanded considerably over the past decade and is expected to continue growing. NEMA registers of licensed entities involved in e-waste management in Kenya currently list approximately 30 companies engaged in activities such as collection, storage, dismantling, refurbishment, recycling, transfer operations, and transboundary movement of waste.

Based on the disposal pathway estimates developed in this study, formal collection and recycling pathways handled approximately 2.9 kt of e-waste in 2025, equivalent to 5.1 per cent of total estimated e-waste flows. This comprised 1.2 kt of e-waste brought to e-waste collection centres, 1 kt picked up by an e-waste collection centre, and 0.7 kt as purchases from informal sector operators. Formal systems remain concentrated primarily in major urban centres, particularly Nairobi and surrounding counties.

A. Sinomet Kenya Limited

Established in 2011

Sinomet Kenya specializes in waste transportation, treatment, disposal, recycling, refurbishment, and transboundary movement of e-waste. The company operates transfer stations and storage yards and sources e-waste from households, businesses, government institutions, and corporate entities. Sinomet also undertakes collection, sorting, dismantling, storage, refurbishment, and material recovery activities, while maintaining close relationships with local scrapping networks and international downstream recyclers and upcyclers. The company processes approximately 0.30 kt of e-waste annually and operates with approximately 10 employees, while also engaging more than 100 informal collectors, to whom the company provides financial incentives for the collection of higher-value components such as batteries and circuit boards.

B. WEEE Centre

Established in 2012

The WEEE Centre is one of Kenya's largest formal e-waste recyclers, focusing on the environmentally sound management of electrical and electronic waste. The organisation provides collection, dismantling, refurbishment, remanufacturing, IT asset recovery, secure data destruction, training, and e-waste recycling services, while operating under a zero-dumping approach. The WEEE Centre is licensed by NEMA to transport and recycle e-waste and holds ISO 9001:2015 and ISO 14001:2015 certifications. Since inception, the organisation has processed more than 10 kt of e-waste. Through partnerships with organisations including Close the Gap and Computers for Schools Kenya, used ICT equipment is refurbished and redistributed within East Africa to support digital access initiatives. Hazardous fractions that cannot be processed locally are exported to certified downstream facilities abroad. The organisation operates more than 100 drop-off points and regional offices across Kenya, alongside direct operations in Uganda and the United Republic of Tanzania and partnerships across Africa. Find out more: https://www.weeecentre.com/

C. EWIK (E-Waste Initiative Kenya)

Established in 2015

EWIK is a non-governmental organisation that promotes environmentally sound e-waste management in Kenya, with a particular focus on integrating and supporting informal sector actors. The organisation operates collection networks across the country and works with recyclers, producers, informal collectors, and public institutions to improve e-waste collection and management. EWIK promotes circular economy approaches through both recycling and the refurbishment and redistribution of ICT equipment to support digital access initiatives. Its activities include training and skills development, public awareness campaigns, research and documentation, and the promotion of circular economy innovation and green jobs. EWIK operates through a core team of staff and volunteers, supported by a wider network of collectors and technical partners. As a member of the Kenya Extended Producer Responsibility Organisation (EPROK), EWIK also participates in public collection and awareness initiatives, including the Take Back Drive campaign, which encourages the responsible disposal of obsolete electronics. Find out more at: https://ewik.org

D. Enviroserve Kenya Limited

Established in 2017

Enviroserve Kenya is a commercial social enterprise focused on environmentally sound e-waste management and downstream treatment partnerships. The company provides accredited e-waste collection, recycling, and treatment services aimed at reducing hazardous disposal and supporting circular economy initiatives. Enviroserve Kenya has developed projects linked to battery reuse and secondary applications through collaborations with organisations including SunCulture and WeTu, supporting alternatives to disposable batteries and kerosene-based lighting systems. Fractions that cannot be treated locally are exported to certified recycling facilities abroad, including the company's affiliated SERA R2 V3-certified treatment facility in Dubai, which is equipped for the handling of hazardous electronic waste streams. Enviroserve Kenya forms part of the wider Enviroserve Group, which operates e-waste recycling activities across multiple countries. Find out more: https://enviroserve.co.ke/

In addition to the companies profiled, other formal recyclers and e-waste service providers operating in Kenya include Sintmond Group Ltd, Close the Gap Kenya Limited, and WarmTech Africa Ltd.

TRANSBOUNDARY MOVEMENT OF E-WASTE AND USED EEE

Cross-border movements of UEEE and e-waste contribute to e-waste flows in Kenya, although their scale remains uncertain due to limited monitoring and the prevalence of undocumented trade. The Global Transboundary E-waste Flows Monitor estimated that Africa imported approximately 546 kt and exported 132 kt of UEEE and e-waste in 2019, with most movements occurring outside formally documented channels (Baldé et al., 2022). Within East Africa, imports were estimated at 57 kt, around half originating from Europe and one-third from within the region, while exports totalled 13 kt and occurred exclusively within East Africa.

Based on these regional patterns, Kenya is likely a net importer of UEEE, with inflows originating from Europe, Asia, North America, and neighbouring countries. While typically traded as second-hand goods, a proportion of these imports consists of near end-of-life or non-functional equipment that rapidly enters the domestic waste stream, contributing to e-waste generation within the country (Baldé et al., 2022).

Official data reported under the Basel Convention indicate limited recorded exports of e-waste from Kenya (Table 11). In 2020, Kenya reported the export of 600 tonnes of used telecommunication equipment, including printed circuit boards, modules, cables, antennas, and batteries, to Malaysia for recovery operations. No imports of e-waste were reported under the Convention. Basel reporting on e-waste remains relatively limited and reflects only a subset of hazardous waste movements subject to notification and control procedures.

Table 11. Basel reported data on exports for relevant categories

Type of waste	Year	Quantity exported (tonnes)	Country of destination	Recovery operation
Used telecommunication equipment(e-waste) pcbas, modules, cables, antennas, batteries	2020	600	Malaysia	R4, R5

Trade data further illustrate the complexity of transboundary e-waste flows. Comtrade data reported under HS 8549 for 2022–2024 indicate both imports and exports of electrical and electronic waste and scrap, including intra-regional trade between Kenya and countries such as Uganda, Rwanda, and the Democratic Republic of Congo (Table 12). Reported imports totalled approximately 12.3 tonnes over the period, consisting mainly of mixed electronic scrap and waste electrical assemblies originating from China, with smaller volumes originating from neighbouring African countries, Europe, and the United States.

Reported exports totalled approximately 66.3 tonnes, with Türkiye and the Democratic Republic of Congo among the principal destinations. While these quantities are small relative to national e-waste generation and reported Basel Convention trade flows, they highlight the existence of both regional and international downstream markets for selected e-waste fractions.

Table 12. Imports and exports reported for Kenya under HS 8549 (Source: UN Comtrade)

Year	Flow	Partner	HS code	Net weight (kg)	Primary value
2022	Import	France	854929	0.2	78.809
2022	Import	Malaysia	854931	3.65	1219.111
2022	Import	China	854939	50	146.523
2023	Import	China	854929	11	80.094
2023	Import	China	854931	0.68	280.671
2023	Import	Uganda	854931	4000	1683.719
2023	Import	China	854939	582.5	3205.283
2023	Import	South Africa	854939	27	2054.8
2023	Import	USA	854939	2	1444.785
2023	Import	China	854999	6500	336.766
2023	Export	Dem. Rep. of the Congo	854999	20	497.096
2024	Import	China	854929	0.16	253.926
2024	Export	Türkiye	854929	34342	32583.126
2024	Import	China	854931	100	272.77
2024	Import	Italy	854931	0.8	424.951
2024	Export	Dem. Rep. of the Congo	854931	31980.5	29937.601
2024	Import	China	854939	1033.6	13754.536
2024	Import	Rwanda	854939	8.5	5705.419
2024	Import	India	854939	0.2	293.208
2024	Export	Zambia	854939	2	12.963

Year	Flow	Total Tonnes
2022	Import	0.05
2023	Export	0.02
2023	Import	11.12
2024	Export	66.32
2024	Import	1.14

These regional dynamics are reinforced by porous borders and active informal trade networks that facilitate the movement of used equipment across East Africa before it reaches end of life. Consequently, a substantial share of transboundary e-waste flows occurs outside formal monitoring systems, while weak enforcement, limited inspection capacity, and economic incentives continue to support imports of near end-of-life equipment despite existing restrictions and Kenya's obligations under the Basel Convention (Amoyaw-Osei et al., 2011; CEAT, 2021).

At the same time, limits to domestic recycling capacity necessitates the export of higher-value and hazardous fractions that cannot be processed locally. As a result, Kenya remains integrated into regional and global e-waste value chains primarily through collection and pre-processing, with advanced material recovery and hazardous waste treatment largely occurring outside the country.

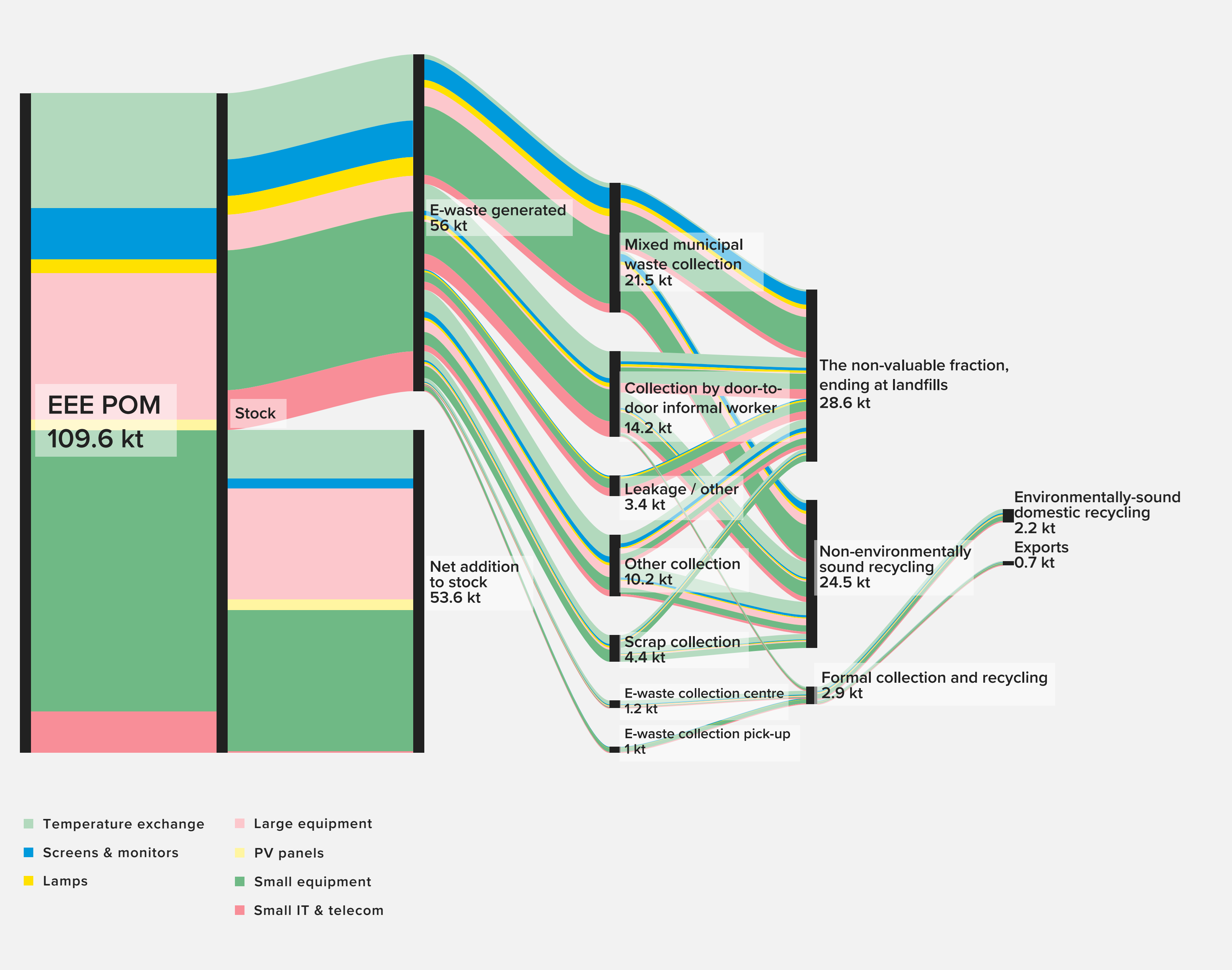
NATIONAL MASS-BALANCE

Figure 12 illustrates the flow of EEE from placement on the market through to end-of-life management in 2025. A total of 109.6 kt of EEE was placed on the market during the year. After accounting for 56.0 kt of e-waste generated, net additions to stock amounted to 53.6 kt, bringing the total stock of EEE in use or storage to 733.8 kt.

At the collection stage, e-waste entered a range of formal and informal pathways. Mixed municipal waste collection accounted for the largest share of flows at 21.5 kt, followed by collection by door-to-door informal workers (14.2 kt), other collection routes (10.2 kt), and scrap collection (4.4 kt). Formal e-waste collection systems directly captured 2.2 kt of e-waste, comprising material received through e-waste collection centres (1.2 kt) and dedicated collection pick-up services (1.0 kt). Leakage and unmanaged pathways accounted for a further 3.4 kt.

At the treatment stage, 24.5 kt of e-waste was estimated to be managed through recycling activities that are not subject to the same environmental and operational standards as the formal sector, including those undertaken by informal actors. A portion of these materials was subsequently transferred to formal recyclers through purchases of valuable components. Accounting for these transfers, a total of 2.9 kt entered the formal collection and recycling system in 2025, with approximately 0.7 kt exported for treatment overseas and 2.2 kt managed through environmentally sound domestic recycling. The remaining 28.6 kt of e-waste generated was estimated to enter final disposal.

Figure 12. National mass balance, Kenya, 2025, Tonnes



Chapter 4. Discussion

OPPORTUNITIES IN E-WASTE MANAGEMENT

Resource potential and environmental impacts of e-waste

The economic value of metals contained in global e-waste was estimated at USD 91 billion in 2022, of which only USD 28 billion is currently recovered, with the remainder lost through disposal or substandard treatment (Baldé et al., 2024). This highlights the scale of untapped resource potential within e-waste streams, particularly in countries such as Kenya where formal recovery systems remain relatively limited.

Figure 13 shows that the material composition of e-waste generated in 2025 is dominated by ferrous metals and mixed non-metallic fractions such as plastics, glass, and ceramics. Ferrous metals accounted for approximately 19.9 kt, or 35.5 per cent of total e-waste generated, while other materials represented 28.1 kt (50.2 per cent). Aluminium accounted for 3.5 kt (6.2 per cent), copper 2.2 kt (3.9 per cent), and minor metals and alloys 2.3 kt (4.2 per cent).

Although many critical and precious metals occur only in relatively small concentrations, they remain economically significant due to their high value and strategic importance. The breakdown of minor metals highlights the presence of materials such as chromium, nickel, zinc, manganese, cobalt, silver, gold, and rare earth elements within Kenya's e-waste stream. While these fractions are comparatively small by mass, they are often concentrated within specific products such as printed circuit boards, batteries, screens, and telecommunications equipment, making them important targets for specialised recovery processes.

Figure 13. E-waste generated in 2025 broken down by material type and element, Tonnes

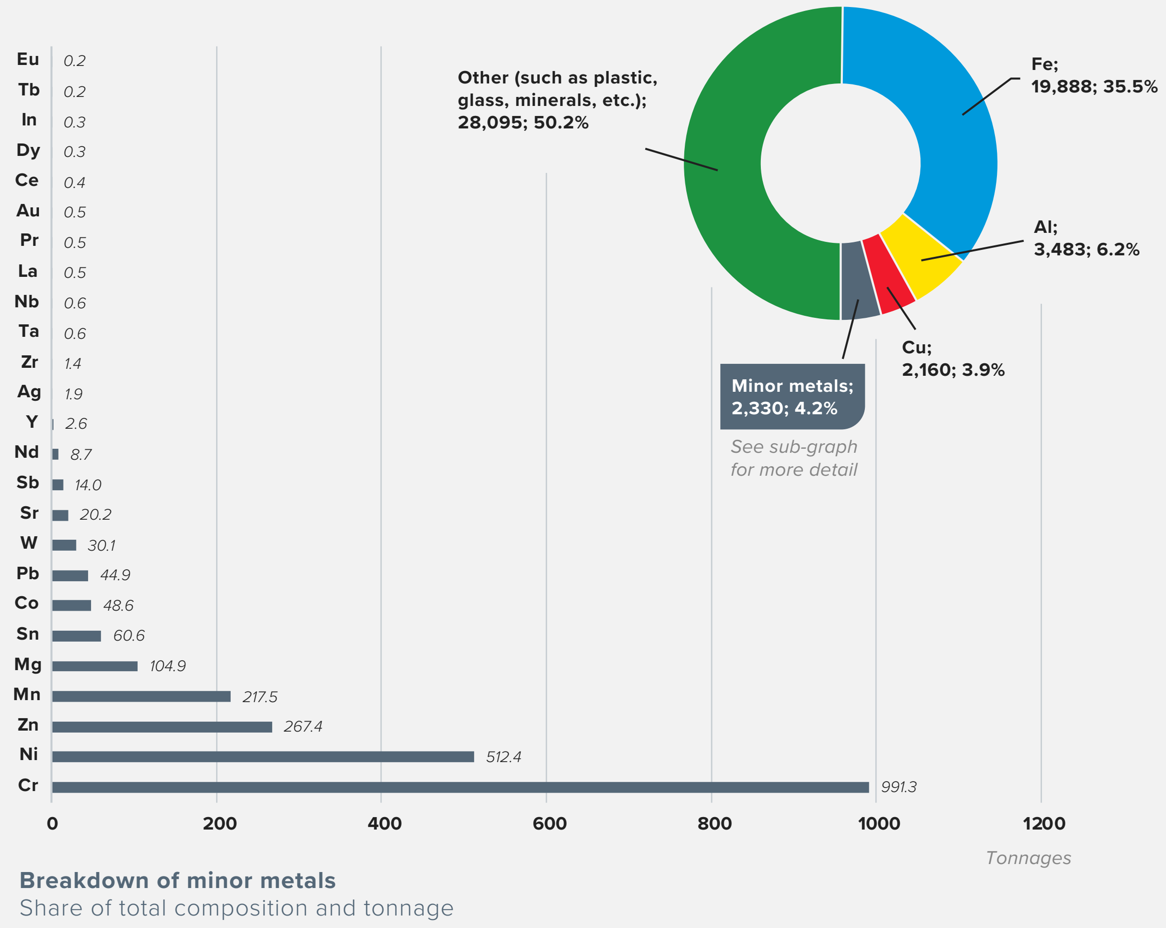
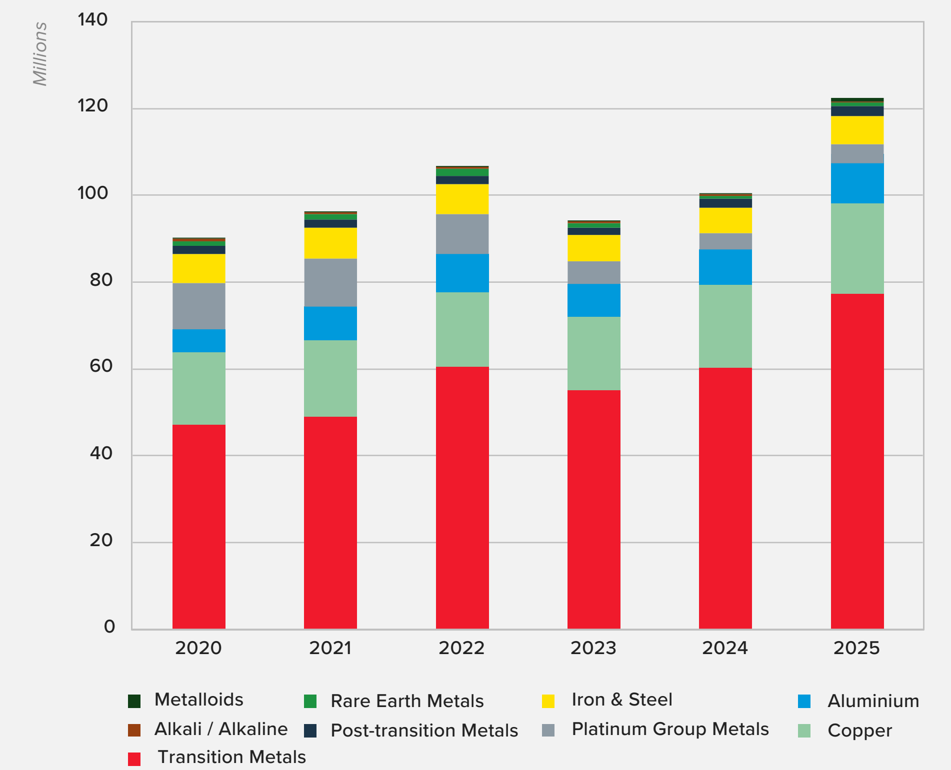


Figure 14 illustrates an overall increase in the estimated economic value of metal fractions in e-waste between 2020 and 2025. Total estimated value increases from approximately USD 90.1 million in 2020 to USD 122.4 million in 2025, representing an increase of around 36 per cent over the period. The increase reflects the continued growth in e-waste generation and the increasing quantity and value of embedded metals entering the waste stream.

Transition metals, including gold, silver, and cobalt, account for the largest share of the metal value in the period between 2020 and 2025. Their estimated value increases from USD 47.3 million in 2020 to USD 77.3 million in 2025, accounting for 63 per cent of the total monetary value in that year. Copper and aluminium follow, with values of USD 21.0 million and USD 9.2 million in 2025, respectively. Iron and steel fractions had an approximate value of USD 6.3 million in 2025, with this broadly stable over the period. Post-transition metals contribute approximately 1.9 per cent of the total value in 2025.

Despite this growing resource potential, only a relatively small share of e-waste in Kenya currently enters formal collection and recycling systems. Significant quantities instead continue to flow through informal collection and treatment pathways, mixed waste disposal, stockpiling, or unmanaged disposal routes. While informal recovery activities may recover part of the embedded material value, these activities are often associated with limited environmental controls and unsafe dismantling practices (Orisakwe et al., 2019).

Figure 14. Economic value of metal fractions in e-waste generated (USD)



Key opportunities

While e-waste poses significant environmental, health, and logistical challenges, it also presents growing socio-economic and environmental opportunities when managed through more circular and resource-efficient systems. Recovering materials through collection, refurbishment, dismantling, and recycling can reduce dependence on imported virgin materials, improve resource productivity, and support the growth of domestic recycling and manufacturing value chains. Improved recovery and environmentally sound treatment can also reduce pressures associated with virgin material extraction, lower greenhouse gas emissions, and limit the release of hazardous substances into the environment through uncontrolled dumping, burning, and informal processing.

These activities are also closely linked to employment creation across both formal and informal sectors, including opportunities for transporters, collectors, repair workers, refurbishers, dismantlers, and waste pickers. Kenya's repair sector has been estimated at 1.5 per cent of its economy (Munro et al., 2022), while the recycling sector is growing. According to UNEP (2018), the circular economy has the potential to generate up to 11 million jobs across Africa through activities linked to repair, refurbishment, recycling, logistics, and secondary materials recovery.

Leveraging opportunities across the electronics value chain (Table 13) could stimulate entrepreneurship, support industrial development, enhance employment creation, and improve livelihoods, while contributing to Kenya's broader sustainable development and circular economy objectives.

Table 13. Summary of key opportunities in improved e-waste management

OPPORTUNITY AREA	DESCRIPTION	IMPACT
1. Collection systems	Organised take-back schemes, often facilitated by PROs, ensure systematic collection and transportation of e-waste to treatment facilities. Establish collection systems that effectively encompass formal and informal operators.	Creates jobs for transporters, aggregators, collectors, and community enterprises while improving collection rates, material recovery, and reducing illegal dumping.
2. Dismantling and refurbishment	Extends the functional life of EEE through repair, refurbishment, component recovery, and reuse, including recovery of valuable materials such as gold, silver, palladium, and copper.	Reduces waste volumes entering disposal pathways, minimises environmental impacts, improves access to technology, supports technical skills development, and generates formal and informal employment opportunities.
3. Recycling	Converting e-waste fractions into secondary raw materials for industrial use, reducing dependence on virgin resources and supporting circular production systems.	Supports local industrial development, conserves natural resources, reduces greenhouse gas emissions, creates direct and indirect employment, promotes technical innovation, and encourages sustainable business models.
4. Urban mining and raw materials	E-waste is a source of valuable raw materials including copper, aluminium, lithium, cobalt, rare earth elements, and other strategic metals essential for modern industries.	Advanced recovery facilities can improve resource security, reduce environmental pressures associated with mining, and position Kenya as a regional hub for secondary raw materials recovery.
5. Export potential	Properly managed e-waste can generate secondary raw materials for export, including copper, aluminium, and precious metal fractions with strong international demand.	Generates foreign exchange earnings and strengthens participation in regional and global recycling markets.
6. Technological innovation	The growing e-waste sector increases demand for innovation in waste tracking, dismantling, material recovery, and environmentally sound processing technologies.	Encourage startups, research institutions, and the development of a green technology ecosystem.
7. Skills development and capacity building	The sector creates demand for training in electronics repair, refurbishment, materials recovery, recycling, and hazardous waste management.	Supports employability, workforce development, and industrial diversification.
8. Policy and regulatory opportunities	Implementation of Extended Producer Responsibility (EPR) frameworks, certification systems, and stronger regulation of transboundary e-waste movements generates demand for compliance and monitoring services.	Creates opportunities for environmental auditing, logistics, consultancy, certification, sustainability reporting, and compliance services as e-waste regulation becomes more stringent.
9. Climate change mitigation	Improved e-waste management reduces emissions associated with virgin material extraction, energy-intensive manufacturing, and improper disposal practices.	Contributes to climate mitigation goals and may support participation in carbon finance and low-carbon development initiatives.
10. Community development and social impact	Inclusive e-waste systems can integrate informal workers into safer and more structured collection and recycling systems through training and support programmes.	Improves livelihoods, promotes safer working conditions, and strengthens environmentally sound waste management practices.

CHALLENGES TO INCREASING ENVIRONMENTALLY SOUND E-WASTE MANAGEMENT

Despite growing opportunities within the sector, several operational, economic, and institutional barriers act as challenges to increasing environmentally sound end-of-life management of e-waste in Kenya.

A major challenge is the dominance of informal collection and processing systems, which continue to handle a substantial share of e-waste flows outside formal environmental and occupational safety standards. Informal actors often provide higher immediate cash returns to consumers while avoiding regulatory and environmental compliance costs, creating strong competitive pressures on formal recyclers and contributing to the persistence of unsafe practices such as crude dismantling and open burning (Baldé et al., 2024; GIZ, 2021).

High compliance and infrastructure costs further limit investment in formal collection and recycling systems. Certified treatment facilities, specialised recycling equipment, transport systems, and reporting requirements require substantial upfront capital investment, creating barriers particularly for small and medium-sized enterprises and new market entrants (NEMA, 2021; GIZ, 2021). Although circular economy approaches can generate longer-term economic benefits through improved resource productivity and material recovery, the upfront costs associated with new infrastructure, reverse logistics systems, and environmentally sound treatment facilities remain a major economic barrier.

Operational challenges also reduce the effectiveness of formal systems. Collection infrastructure remains limited outside major urban centres, while the high cost of transporting e-waste from dispersed and remote areas reduces collection efficiency, particularly for products such as off-grid solar systems and small consumer electronics (Efficiency for Access Coalition, 2019). Low public awareness of formal disposal pathways and the absence of targeted financial incentives, such as deposit-refund systems or trade-in programmes, further limit participation in formal collection systems (Forti et al., 2020; ITU and UNITAR, 2023).

Regulatory and institutional barriers also remain significant. Weak enforcement of existing and previous regulatory frameworks, including earlier draft e-waste regulations, has historically undermined accountability and reduced incentives for compliance (Otieno and Omwenga, 2015). The implementation of the current EPR system has been further delayed by ongoing legal challenges to provisions of the Sustainable Waste Management Act (2022), creating uncertainty around compliance obligations and cost structures. This has hindered the establishment of Producer Responsibility Organisations and delayed investment in collection and recycling infrastructure, limiting the operationalisation of the formal system.

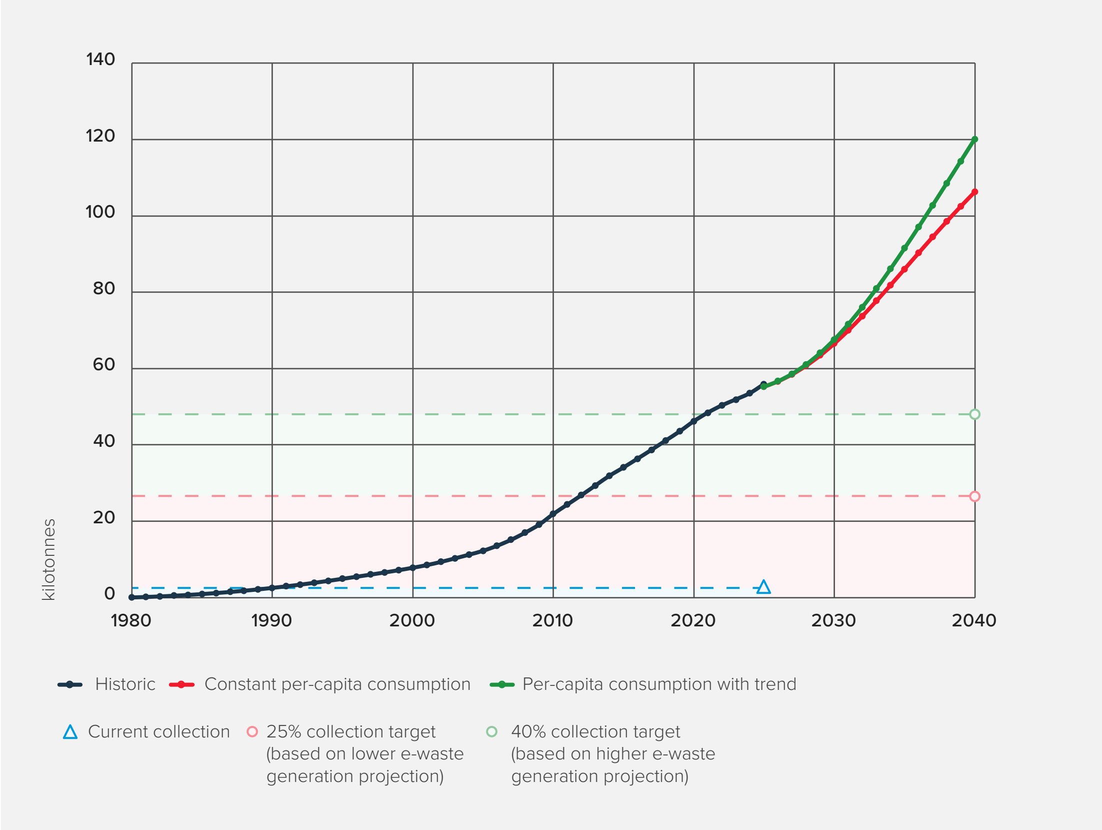
Furthermore, fluctuations in global commodity prices for materials such as copper and aluminium continue to affect the financial viability of collection and recycling activities, influencing both formal and informal recovery rates over time (Baldé et al., 2024).

FINANCING REQUIREMENTS

Previous studies have estimated the costs of managing e-waste in Kenya, including capital expenditures (CAPEX) and operating expenditures (OPEX) associated with collection, transport, and treatment activities (Magalini et al., 2017). Building on this work, we estimate the financing requirements associated with scaling formal collection and recycling systems in Kenya, focusing specifically on treatment-related costs.

Future e-waste generation was projected under two scenarios: one assuming per-capita EEE consumption remains constant over time, with growth driven only by population increases, and a second assuming that historical increases in per-capita EEE consumption continue into the future. Under these assumptions, annual e-waste generation is projected to reach between 106 kt and 120 kt by 2040 (Figure 15).

Figure 15. E-waste generation under different scenarios and collection target range, tonnes



Financing requirements were estimated based on the additional quantities of e-waste that would need to be collected and treated through formal systems under alternative collection targets. Two collection scenarios were modelled: 25 per cent and 40 per cent formal collection by 2040.

Under the 25 per cent formal collection target, cumulative treatment-stage financing requirements between 2026 and 2040 are estimated at approximately USD 15.2–17.2 million in CAPEX and USD 71.4–140.1 million in OPEX, equivalent to an annualised financing requirement of USD 5.8–10.5 million per year. Under the 40 per cent collection target, estimated financing requirements increase to USD 26.8–30.2 million in CAPEX and between USD 125.3–245.9 million in OPEX, equivalent to an annualised financing requirement of USD 10.1–18.4 million per year (Table 14).

While benefits are not comprehensively quantified as part of this study, revenues from the sale of recovered materials are likely to represent an important source of value (Badenoch et al., 2024). Based on projected e-waste generation between 2026 and 2040, the value of metal fractions collected under a 25 per cent formal collection target is estimated at USD 238-257.8 million, increasing to USD 417.6-452.5 million under a 40 per cent collection target (Table 15). These estimates are presented in nominal terms and do not account for inflation, discounting, or future changes in commodity prices.

Table 14. Cumulative costs (2026-2040) for treatment of e-waste associated with each collection target (USD millions)

Collection target	Total CAPEX range	OPEX range	Annualised total (2026–2040)
25%	$15.2M - $17.2M	$71.4M - $140.1M	$5.8M - $10.5M
40%	$26.8M - $30.2M	$125.3M - $245.9M	$10.1M - $18.4M

Table 15. Comparison of cumulative treatment-stage financing requirements and metal values, 2026–2040 (USD millions)

Collection target	Cost range and midpoint	Benefit range and midpoint
25%	86.7–157.3 (122.0)	238–257.8 (247.9)
40%	152.1–276.1 (214.1)	417.6–452.5 (435.0)

In both scenarios, the estimated value of metals exceeds the projected treatment-stage financing requirements. However, these values represent the gross value of metal fractions and do not account for collection, processing, refining, transport, or market transaction costs.

Increasing investment in environmentally-sound e-waste management has the potential to generate substantial employment and support the development of a circular economy. Research by NEMA indicates that Kenya could unlock over USD 730 million in against-baseline economic gains through circular economy interventions across 6 sectors including agri-food, plastics, construction, e-waste, and general waste (Invest Kenya, 2026). At the macro-level, circular economy measures could boost GDP, improve Kenya's trade balance, and create almost 50,000 additional jobs (Karcher et al., 2020).

Investments in recycling infrastructure can require upfront capital for specialised equipment and facilities, creating barriers to entry while these may not be entirely offset by onward sales (Karcher et al., 2020). Several revenue streams have the potential to finance recovery. EPR schemes represent a key potential mechanism, enabling the collection of fees from producers to finance collection and recycling activities and reallocating costs along the value chain based on the polluter pays principle although current fee levels remain relatively low (Derks et al., 2024).

Chapter 5.
Summary and recommendations

Strengthening environmentally sound management of e-waste in Kenya will require coordinated action across policy, infrastructure, financing, data systems, innovation, and stakeholder engagement. While government plays an important coordinating role, implementation will also require action by producers, PROs, recyclers, county governments, development partners, civil society organisations, and informal sector actors. The following recommendations address the key priorities identified in this report.

1. EXPAND E-WASTE COLLECTION SYSTEMS AND RECYCLING INFRASTRUCTURE

Kenya already demonstrates significant circular economy activity around electronics through repair, refurbishment, reuse, informal collection systems, and a growing formal recycling sector. Strengthening environmentally sound collection and treatment systems can build on these existing activities while improving material recovery, reducing environmental risks, and supporting domestic recycling industries and employment generation.

1. Conduct a national assessment of e-waste management infrastructure requirements, including collection, transport, dismantling, recycling, and downstream recovery capacity.
2. Expand nationwide collection infrastructure and reverse logistics systems, including county-level drop-off centres, take-back systems, and decentralised collection models, particularly in rural and underserved areas.
3. Strengthen linkages between formal recyclers and informal collectors to improve collection rates and environmentally sound recovery pathways.
4. Invest in environmentally sound recycling, dismantling, pre-processing, refurbishment, and materials recovery industries to strengthen domestic processing capacity and reduce dependence on export markets where economically and environmentally feasible.
5. Promote skills development, entrepreneurship, and circular economy industries as part of broader green industrialisation, green jobs, and inclusive economic growth strategies.

2. INTEGRATE AND ENABLE THE INFORMAL SECTOR

Informal actors currently play a major role in collection, sorting, refurbishment, dismantling, and material recovery activities across Kenya. Policies should prioritise integration and upgrading approaches alongside environmental and occupational safety improvements.

1. Develop pathways to integrate informal collectors and recyclers into formal value chains and EPR systems.
2. Provide training, equipment, and safer working conditions for informal sector actors.
3. Support cooperative models, aggregation systems, and stronger market linkages.
4. Align incentives to reduce harmful practices such as open burning and unsafe dismantling methods.
5. Strengthen environmentally sound downstream recycling pathways accessible to informal sector actors.

3. INCREASE PUBLIC AWARENESS AND CONSUMER PARTICIPATION

Consumer participation remains essential to improving formal collection rates and reducing environmentally harmful disposal practices. Increasing public awareness of e-waste risks, available collection options, and the value of material recovery can support higher participation in formal collection systems and strengthen the effectiveness of EPR implementation.

1. Implement national awareness campaigns on e-waste risks, environmentally sound disposal practices, and available collection options.
2. Introduce incentives for returning end-of-life equipment, including trade-in schemes, take-back systems, and deposit-refund mechanisms.
3. Improve the visibility, accessibility, and convenience of collection points.
4. Engage schools, communities, civil society organisations, and county governments in awareness and outreach activities.

4. STRENGTHEN THE POLICY AND REGULATORY ENVIRONMENT

Kenya has made significant progress in establishing a regulatory framework for e-waste management, including the introduction of EPR regulations and broader circular economy policy initiatives. Continued strengthening of the policy and regulatory environment will nevertheless be required to support investment and enable more effective implementation across the e-waste value chain.

1. Accelerate the operationalisation of EPR systems, including the establishment and effective functioning of PROs.
2. Strengthen enforcement capacity within NEMA and other relevant authorities to improve compliance across producers, importers, distributors, refurbishers, and recyclers.
3. Clarify institutional roles and responsibilities across national and county governments to improve coordination, accountability, and implementation effectiveness.
4. Introduce clear national collection and recycling targets under the EPR framework, aligned with international good practice and progressively strengthened over time.
5. Strengthen controls on imports of used EEE to reduce inflows of near end-of-life and non-functional equipment.

5. DEVELOP SUSTAINABLE FINANCING MECHANISMS

Achieving environmentally sound e-waste management at scale will require stable and predictable long-term financing mechanisms capable of supporting collection, transport, recycling, monitoring, and regulatory activities. While EPR fee systems are likely to provide the primary financing mechanism, complementary public, private, and blended finance approaches may also be required to support infrastructure expansion, innovation, and investment in underserved regions.

1. Fully implement EPR fee systems to establish stable and predictable financing streams for collection, recycling, monitoring, and environmentally sound treatment activities.
2. Explore complementary financing mechanisms such as deposit-refund systems, consumer take-back incentives, public-private partnerships, and targeted public investment.
3. Increase investment in enabling infrastructure, particularly in underserved and rural regions.
4. Strengthen financial incentives for formal recyclers to improve competitiveness relative to informal activities operating outside environmental and occupational safety standards.
5. Leverage development finance and climate-related funding mechanisms to support investments in circular economy infrastructure and recycling industries.

6. EXPAND DATA SYSTEMS AND STATISTICS

Strengthening national data systems should be treated as a foundational priority for improving e-waste governance in Kenya. EPR systems provide an important mechanism for generating and centralising data on formal collection, recycling, and treatment activities. Strengthening implementation of reporting requirements under applicable regulations can substantially improve national monitoring and evaluation systems.

1. Strengthen EPR reporting systems and reporting flows to NEMA, ensuring that reporting captures tonnages, collection, treatment, recovery, and downstream material flows rather than only registration of participating entities.
2. Systematise the inventorying and tracking of e-waste flows across collection, refurbishment, recycling, export, disposal, and transboundary movements, harnessing existing surveys aimed at households and industry where relevant.
3. Continue to regularly publish data on e-waste, ensuring full alignment with internationally recognised methodologies and strengthening country-specific national data inputs.
4. Use strengthened data systems to support policy evaluation, SDG monitoring and reporting, POPs inventories, quantifying circular economy indicators, and underpinning evidence-based policymaking.

Chapter 6. References

Amoyaw-Osei, Y., Agyekum, O.O., Pwamang, J.A., Mueller, E., Fasko, R. and Schluep, M. (2011) *Ghana e-waste country assessment*. SBC E-waste Africa Project, 66, p. 111.

American Society of Mechanical Engineers (ASME) (2021) *Turning e-waste into an opportunity*. https://www.asme.org/topics-resources/content/turning-e-waste-into-an-opportunity (Accessed: 8 June 2026).

Badenoch, C., Le Blay, H. and De Greef, M. (2024) *Investing in the waste and circularity sector in Kenya: An introductory guide*. Aspen Network of Development Entrepreneurs (ANDE). Available at: https://andeglobal.org/wp-content/uploads/2024/09/Investing-in-the-Waste-and-Circularity-Sector-in-Kenya-Sep-2024.pdf (Accessed: 30 March 2026).

Baldé, C.P., Kuehr, R., Blumenthal, K., Fondeur Gil, S., Kern, M., Micheli, P., Magpantay, E. and Huisman, J. (2015) *E-waste statistics: Guidelines on classifications, reporting and indicators*. Bonn: United Nations University, IAS–SCYCLE.

Baldé, C.P., D'Angelo, E., Luda, V., Deubzer, O., and Kuehr, R. (2022) *Global Transboundary E-waste Flows Monitor 2022*. United Nations Institute for Training and Research (UNITAR), Bonn, Germany.

Baldé, C.P., Kuehr, R., Yamamoto, T., McDonald, R., D'Angelo, E., Althaf, S., Bel, G., Deubzer, O., Fernandez-Cubillo, E., Forti, V., Gray, V., Herat, S., Honda, S., Iattoni, G., Khetriwal, D.S., Luda di Cortemiglia, V., Lobuntsova, Y., Nnorom, I., Pralat, N. and Wagner, M. (2024) *Global E-waste Monitor 2024*. Geneva/Bonn: ITU and UNITAR.

Bimir, M.N. (2020) 'Revisiting e-waste management practices in selected African countries', Journal of the Air & Waste Management Association, 70(7), pp. 659–669.

Centre for Environment, Action, and Technology (CEAT) (2021) *Kenya is Europe's dumpsite: Study on illegal e-waste trade*. Available at: https://www.cetri.be/Kenya-is-Europe-s-dumpsite (Accessed: 30 March 2026).

Communications Authority of Kenya (CA) and Kenya National Bureau of Statistics (KNBS) (2024) *Analytical report on information and communication technology (ICT) based on the 2022 Kenya Demographic and Health Survey (KDHS)*. Nairobi: CA and KNBS.

Cook, E., Velis, C., Wilson, D.C. and Cheeseman, C. (2026) *Global Waste Management Outlook 2*. Nairobi: United Nations Environment Programme (UNEP).

Derks, M., Bidmon, C. and Ciulli, F. (2024) *Circular e-waste ecosystems in necessity-driven contexts: The impact of formal institutional voids*. TNO. Available at: https://publications.tno.nl/publication/34642161/p1kXbX/derks-2024-circular.pdf (Accessed: 30 March 2026).

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (2021) *Baseline assessment on electronic waste management and extended producer responsibility in displacement settings in Ethiopia, Kenya and Uganda*. Available at: https://energypedia.info/images/4/4c/GIZ_ESDS_E-Waste_EPR_Displacement_Settings.pdf (Accessed: 30 March 2026).

East African Communications Organisation (EACO) (2022) *Regional E-waste Management Strategy 2022–2027*. Available at: https://eaco.int/admin/docs/publications/EACO%20Regional%20E-waste%20Management%20Strategy%202022-2027.pdf (Accessed: 30 March 2026).

Efficiency for Access Coalition (2019) *Global LEAP Awards: Solar E-Waste Market Scoping Report*. London: CLASP. Available at: https://efficiencyforaccess.org/wp-content/uploads/Solar-E-Waste-Market-Scoping-Report.pdf (Accessed: 30 March 2026).

Forti, V., Baldé, C.P. and Kuehr, R. (2018) *E-waste statistics: Guidelines on classifications, reporting and indicators (Second edition)*. Bonn: United Nations University.

Forti, V., Baldé, C.P., Kuehr, R. and Bel, G. (2020) *The Global E-waste Monitor 2020: Quantities, flows and the circular economy potential*. Bonn/Geneva/Rotterdam: United Nations University (UNU)/UNITAR – SCYCLE Programme, ITU and ISWA. Available at: https://doi.org/10.18356/17b2b3d8-en.

International Labour Organization. (2015) *4.5 Informal economy workers*. Retrieved from https://www.ilo.org/resource/45-informal-economy-workers (Accessed October 29, 2025).

International Monetary Fund (IMF) (2025) *World Economic Outlook Database: Kenya gross domestic product (GDP) and related indicators*. Available at: https://www.imf.org/external/datamapper/NGDPDPC@WEO/OEMDC/ADVEC/WEOWORLD/KEN (Accessed: 30 March 2026).

International Telecommunication Union (ITU) and United Nations Institute for Training and Research (UNITAR SCYCLE Programme) (2023) *Towards the harmonization of data collection – A baseline study for e-waste in Africa*. Geneva/Bonn: ITU and UNITAR.

Invest Kenya (2026) *Waste Management and Circular Economy: Investment Pathways and Opportunities in Kenya*. Available at: https://www.systemiq.earth/wp-content/uploads/2026/03/Invest-Kenya_Sector-pack_Waste-Management_Circular-Economy.pdf (Accessed 18 May 2026).

Karcher, S.Y., Wekesa, Z.W., Waweru, J.K., Käsner, S., Desmond, P.K., Smit, T.A.B., Hemkhaus, M., Ahlers, J., Van Hummelen, S., Chewpreecha, U., Smith, A. and McGovern, M. (2020) *Circular economy in the Africa-EU cooperation – Country report for Kenya*. Trinomics B.V., Tomorrow Matters Now Ltd., adelphi Consult GmbH and Cambridge Econometrics Ltd.

Kenya National Bureau of Statistics (KNBS) (2012) 2009 *Kenya Population and Housing Census analytical report on amenities and household assets*. Nairobi: KNBS. Available at: https://www.knbs.or.ke/wp-content/uploads/2023/09/2009-Kenya-population-and-Housing-Census-Analytical-Report-on-Amenities-and-Household-Assets.pdf (Accessed: 15 May 2026).

Kenya National Bureau of Statistics (KNBS) (2018) *2015/16 Kenya Integrated Household Budget Survey (KIHBS) basic report*. Nairobi: KNBS. Available at: https://www.knbs.or.ke/wp-content/uploads/2023/09/2015-2016-Kenya-Integrated-Household-Budget-Survey-Basic-Report.pdf (Accessed: 15 May 2026).

Kenya National Bureau of Statistics (KNBS) (2022a) 2019 *Kenya Population and Housing Census: Analytical report on population projections (Vol. XVI)*. Nairobi: KNBS.

Available at: https://www.knbs.or.ke/wp-content/uploads/2023/09/2019-Kenya-population-and-Housing-Census-Analytical-Report-on-Population-Projections.pdf (Accessed: 1 April 2026).

Kenya National Bureau of Statistics (KNBS) (2022b) *2019 Kenya Population and Housing Census analytical report on information and communication technology (ICT).* Nairobi: KNBS. Available at: https://www.knbs.or.ke/wp-content/uploads/2023/09/2019-Kenya-population-and-Housing-Census-Analytical-Report-on-ICT.pdf (Accessed: 15 May 2026).

Kenya National Bureau of Statistics (KNBS) (2022) *Economic Survey 2022.* Nairobi: KNBS. Available at: https://www.knbs.or.ke/wp-content/uploads/2022/05/2022-Economic-Survey1.pdf (Accessed: 30 March 2026).

Kenya National Bureau of Statistics (KNBS) (2023) *Compendium of environment statistics 2023.* Nairobi: KNBS. Available at: https://www.knbs.or.ke/wp-content/uploads/2025/02/Compendium-of-Environment-Statistics-2023.pdf (Accessed: 30 March 2026).

Kenya National Bureau of Statistics (KNBS) (2024) *The Kenya Poverty Report 2022: Building brighter futures: Data and evidence to tackle poverty in Kenya.* Nairobi: KNBS. Available at: https://www.knbs.or.ke/wp-content/uploads/2024/10/The-Kenya-Poverty-Report-2022.pdf (Accessed: 30 March 2026).

Kenya National Bureau of Statistics (KNBS) (2025a) *Analytical report on ICT based on the 2023–24 Kenya Housing Survey.* Nairobi: KNBS. Available at: https://www.knbs.or.ke/reports/analytical-report-on-ict-based-on-the-2023-24-kenya-housing-survey/ (Accessed: 30 March 2026).

Kenya National Bureau of Statistics (KNBS) (2026) *2026 Economic Survey: Popular version.* Nairobi: KNBS. Available at: https://www.knbs.or.ke/wp-content/uploads/2026/04/2026-Economic-Survey-Popular-version.pdf (Accessed: 15 May 2026).

Kyalo, M. (2022) 'Dandora dumpsite: Where the recycling dream goes to die', *The Elephant*, 23 September. Available at: https://www.theelephant.info/opinion/2022/09/23/dandora-dumpsite-where-the-recycling-dream-goes-to-die/ (Accessed: 2 April 2026).

Lysaght, O., Forti, V., Bel, G., Bottausci, S., Schubert, M., Yamamoto, T., Shyla, H., Blepp, M., Cenni, F., de Linde, S., Escobar Ocampo, D., Iattoni, G., Khwamsawat, K., Kuehr, R., Korajčević, S., Ngumba, L., Magpantay, E., Martínez, L.H., Menton, N., Miet, S., Minja, R., Newbury, M., Oudshoorn, R., Wagner, M., Weber, R. and Baldé, C.P. (2026) *E-waste statistics: Guidelines on classifications, reporting and indicators (Third edition).* Bonn: UNITAR–SCYCLE.

Magalini, F., Sinha-Khetriwal, D., & Munyambu, S. (2017) *Cost-Benefit Analysis and Capacity Assessment for the Management of Electronic Waste (E-Waste) in the Off-Grid Renewable Energy Sector in Kenya.* UK Department for International Development (DFID). Available at: https://assets.publishing.service.gov.uk/media/5aec1a5ee5274a702130def2/Cost-Benefit_Analysis_and_Capacity_Assessment_for_the_Management_of_Electronic_Waste__E-Waste__in_the_Off-Grid_Renewable_Energy_Sector_in_Kenya.pdf accessed 18 May 2026.

Maimba, M.W., Ngau, P.W. and Mugo, F.W. (2019) 'Potential effects of computer e-waste disposal management approaches on human health and the environment in Nairobi City County, Kenya', *Journal of Environment Pollution and Human Health*, 7(1), pp. 27–33.

Manufacturing Africa (2022) *Overview of e-waste in Kenya.* London: Manufacturing Africa. Available at: https://manufacturingafrica.org/wp-content/uploads/2025/10/E-waste-EPR-implementation-in-Kenya.pdf (Accessed: 30 March 2026).

Marambe, K. et al. (2021) *Overview of the market on refrigerating appliances and room air conditioners in Eastern and Southern Africa (EAC and SADC regions).* Paris: United Nations Environment Programme (UNEP) – United for Efficiency (U4E). Available at: https://united4efficiency.org/wp-content/uploads/2021/04/SADC_EAC_Market-Assessment_Cooling_20210205_Final.pdf (Accessed: 30 March 2026).

Mboga, J. (2018) 'Sustainability at the heart of business: Analysis of electronic and appliance products warranty available to buyers in Kenya', *International Journal of Science Arts and Commerce*, 3(2), pp. 1–12. Available at: https://www.ijsac.net/sites/default/files/2018-03/3.2.01_0.pdf (Accessed: 30 March 2026).

Ministry of Environment and Forestry (2019) *National E-waste Management Strategy 2019–2024.* Nairobi: Government of Kenya. Available at: https://repository.kippra.or.ke/bitstreams/79d9dca9-172f-4bdc-9661-6037c8e57f84/download (Accessed: 30 March 2026).

Munro, B., Rowe, K., Losneanu, A. and Oldfrey, B. (2022) *Landscaping the repair and reuse economy in Kenya.* Better Futures CoLab.

National Environment Management Authority (NEMA) (2010) *Guidelines for E-waste Management in Kenya.* Nairobi: NEMA/MEMR.

National Environment Management Authority (NEMA) (2021) *National sustainable waste management policy.* Nairobi: NEMA. Available at: https://nema.go.ke/wp-content/uploads/2025/10/Waste-Management-Policy-2021.pdf (Accessed: 30 March 2026).

National Environment Management Authority (NEMA) (2026) *Inventory of Waste Management Facilities in Kenya [dataset].* Available at: https://nema.go.ke/extended-producer-responsibility-epr/ (Accessed: 9 August 2026).

Nygaard, I., Hansen, U.E., Kamau, P., Wamalwa, H., Majale, C., Mireri, C., Mugendi, D., Opinde, G. and Enevoldsen, M. (2023) *E-waste policy brief: Off-grid solar e-waste management in Kenya.* Nairobi: Institute for Development Studies, University of Nairobi. Available at: https://ids.uonbi.ac.ke/sites/ids.uonbi.ac.ke/files/Ewaste-policy-brief-final-in.pdf (Accessed: 30 March 2026).

Ofuya, M., Mulinge, S. and Nalyanya, E. (2023) *MECS study on the repair and end of life of electrical appliances in Kenya.* Available at: https://mecs.org.uk/wp-content/uploads/2023/07/MECS-EoL-Study-Report_Kenya.pdf (Accessed: 30 March 2026).

Ofuya, M.O. and Mulinge, M.K. (2023) 'E-waste management practices and challenges in developing countries: A case study of Nigeria', *Waste Management & Research*, 41(2), pp. 132–143.

Omari, J.N., Mutwiwa, U.N. and Mailutha, J.T. (2016) *'The current status and handling of e-waste in Nairobi City County of Kenya'*, Journal of Sustainable Research in Engineering, 3(1), pp. 22–28. Available at: https://jsre.jkuat.ac.ke/index.php/jsre/article/view/53 (Accessed: 19 May 2026).

Opinde, G., Majale, C. and Nygaard, I. (2024) 'Hibernation of off-grid solar e-waste in Kenya', *Environmental Innovation and Societal Transitions*, 53, 100926. Available at: https://doi.org/10.1016/j.eist.2024.100926.

Orisakwe, O.E., Frazzoli, C., Ilo, C.E. and Oritsemuelebi, B. (2019) 'Public health burden of e-waste in Africa', *Journal of Health and Pollution*, 9(22), 190610. Available at: https://doi.org/10.5696/2156-9614-9.22.190610.

Otieno, I. and Omwenga, E. (2015) 'E-waste management in Kenya: Challenges and opportunities', *Journal of Emerging Trends in Computing and Information Sciences*, 6(12), pp. 661–666.

State Department for Economic Planning (2024) *Third Voluntary National Review on the Implementation of the Sustainable Development Goals*. Available at: https://sdgkenyaforum.org/content/vnr/2024/Submitted_to_New_York_Final_-_VNR_Report_2024190624.pdf (Accessed: 30 March 2026).

United Nations Environment Programme (UNEP) (2018) *Africa waste management outlook*. Nairobi: UNEP. Available at: https://www.unep.org/ietc/resources/publication/africa-waste-management-outlook (Accessed: 30 March 2026).

United Nations Environment Programme (UNEP) (2020) *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*. Nairobi: UNEP.

United Nations Environment Programme (UNEP) (2024) *Global Waste Management Outlook 2024: Beyond an age of waste – Turning rubbish into a resource*. Nairobi: UNEP. Available at: https://www.unep.org/resources/global-waste-management-outlook-2024 (Accessed: 30 March 2026).

United Nations Statistics Division (UNSD) (2025) *Environmental Statistics: Waste Questionnaire 2024 – Kenya Country File (FINAL2024_Kenya_Waste1.xls)*. Available at: https://unstats.un.org/unsd/envstats/Questionnaires/2024/Country%20Files/FINAL2024_Kenya_Waste1.xls (Accessed: 2 April 2026).

United Nations Statistics Division (UNSD) (2026) UN Comtrade Database. Available at: https://comtradeplus.un.org/ (Accessed: 9 August 2026).

Wambugu, A., Muriithi, B., Da Silva, I., Njogo, A. and Muchiri, V. (2024) *Electric Appliance Quality Ecosystem: A Scoping Report for the Kenyan Market*. Edited by F. Musonye, H. Njoroge and N. Bukachi. Nairobi: Modern Energy Cooking Services (MECS). Available at: https://mecs.org.uk/wp-content/uploads/2024/10/Electric-Appliance-Quality-Ecosystem.pdf (Accessed: 19 May 2026).

World Bank (2024) *Environmental and Social Management Framework for the Africa Environmental Health and Pollution Management Program (P167788)*. Washington, DC: World Bank. Available at: https://nema.go.ke/wp-content/uploads/2024/09/Environmental-and-Social-Management-Framework-Africa-Environmental-Health-and-Pollution-Management-Program.pdf (Accessed: 30 March 2026).

World Bank (2025a) *Population, total – Kenya*. World Development Indicators. Available at: https://data.worldbank.org/indicator/SP.POP.TOTL?locations=KE (Accessed: 30 March 2026).

World Bank (2025b) *GDP (current US$) – Kenya (NY.GDP.MKTP.CD)*. World Development Indicators. Available at: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=KE (Accessed: 15 May 2026).

World Bank (2025c) *GDP per capita (current US$) – Kenya (NY.GDP.PCAP.CD). World Development Indicators*. Available at: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=KE (Accessed: 15 May 2026).

World Bank (2025d) *GDP per capita, PPP (current international $) – Kenya (NY.GDP.PCAP.PP.CD)*. World Development Indicators. Available at: https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?locations=KE (Accessed: 15 May 2026).

World Bank (2025e) *Access to electricity (% of population) – Kenya*. World Development Indicators. Available at: https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=KE (Accessed: 15 May 2026).

Chapter 7.
Annexes

Annex A. Status of multilateral environmental agreements (continues on next page)

AGREEMENT	OBJECTIVE	ENTRY INTO FORCE
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)	Basel Convention deals with environmentally sound management of e-waste including prevention of illegal traffic to developing countries and; capacity building for better management of e-waste worldwide	30 August 2000
Montreal Protocol on Substances that Deplete the Ozone Layer (1987)	Protect the earth's ozone layer by phasing out the chemicals that deplete it.	1 January 1989
United Nations Framework Convention on Climate Change (UNFCCC) (1992)	To achieve the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system.	28 November 1994
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998)	Promotes shared responsibilities in relation to the importation of hazardous chemicals. The convention promotes open exchange of information and calls on exporters of hazardous chemicals to use proper labelling, include directions on safe handling, and inform purchasers of any known restrictions or bans.	4 May 2005
Stockholm Convention on Persistent Organic Pollutants (2001)	A global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have harmful impacts on human health or on the environment. There are a number of Persistent Organic Pollutants (POPs), in particular certain types of brominated flame-retardants (PBDEs), perfluorooctane sulfonate (PFOS) which are of concern in relation to EEE. The listing of e-waste therefore requires parties of the Stockholm Convention to take appropriate measures to eliminate releases of POP-PBDE from stockpiles and wastes.	23 December 2004
Minamata Convention on Mercury (2013)	The Minamata Convention on Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury. The Convention draws attention to a global and ubiquitous metal that, while naturally occurring, has broad uses in everyday objects and is released to the atmosphere, soil and water from a variety of sources. Controlling the anthropogenic releases of mercury throughout its lifecycle has been a key factor in shaping the obligations under the Convention	21 December 2023

AGREEMENT	OBJECTIVE	ENTRY INTO FORCE
Cartagena Declaration on the Prevention, Minimization and Recovery of Hazardous Wastes and Other Wastes (2011)	The Declaration was adopted in October 2011 by the COP 10 to the Basel Convention and which declared, among other things, to enhance the active promotion and implementation of more efficient strategies to achieve prevention and minimization of the generation of hazardous waste and other wastes and their disposal; to promote measures to achieve prevention and minimization of hazardous wastes and other wastes generated at source, and to; encourage efforts undertaken at national level to measure and record progress in waste reduction, and to report such progress to the Basel Convention Secretariat.	11 September 2003
The Nairobi Declaration on the Environmentally Sound Management of Electrical and Electronic Waste (2006)	The declaration gave a mandate to the Basel Secretariat to implement a Work Plan for the environmentally sound management of e-waste. The e-waste Work Plan adopted by COP9 included activities in the following work areas: programmes of activities for the environmentally sound management of e-waste in Africa, in Asia Pacific and in South America; the Partnership for Action on Computing Equipment (PACE); and, the preparation of Technical Guidelines on transboundary movement of e-waste, in particular regarding the distinction between waste and non-waste.	
Bamako Convention on the ban on the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (Africa) (1991)	Is a treaty of African nations prohibiting the import of any hazardous (including radioactive) waste. The Bamako Convention uses a format and language similar to that of the Basel Convention but is much stronger in prohibiting all imports of hazardous waste.	
The Durban Declaration (Africa) (2008)	The Declaration called for an African regional platform/forum on e-waste alongside international bodies. The requirements of the Declaration are as follows: countries must review existing legislation, improve their compliance with legislation and amend existing legislation regarding e-waste management.	

Annex B. Disposal pathway estimation methodology

Disposal pathways for e-waste were estimated based on responses to a household and business survey conducted as part of the ITU and UNITAR (2023) EACO project, which asked respondents who confirmed that they had disposed of an EEE item, "If you have discarded that product in the past 24 months, what was the disposal route?". The approach involved four main steps:

1. **Disaggregation of waste generation by institutional sector** - To align with the EACO survey which separately surveyed households and businesses, total e-waste generated calculated based on lifespans is first split into household and non-household sectors based on data on Kenya final demand published by the UN for years 2000-2023, and in particular the components (i) household final consumption expenditure and (ii) general government final consumption expenditure plus gross fixed capital formation, with the latter taken to represent non-households/businesses. A proportional split between these two routes is extended forward to 2025 using a naïve[15] approach, before being applied to total waste generated by UNU-KEY to estimate tonnages of waste generated by households or by business and government.[16]
2. **Accounting for county-level differences** - As the surveys were conducted in urban areas, reported disposal patterns were not assumed to be nationally representative as not all routes would be available across all counties. Survey-based disposal shares were considered to be most robustly applied to the counties in which the survey was actually undertaken as well as in counties with similar levels of urbanization (identified based on data on the urban population by county published by KNBS). E-waste generated was therefore disaggregated to the county-level using the economic indicator of Gross County Production (GCP) (the closest proxy to expenditures) published by KNBS. This was applied to e-waste directly as the share between counties the survey was assumed to be representative of did not change significantly in the period for which GCP data is published. For less urbanised counties, disposal pathways considered to not plausibly be available were removed, and proportions to split e-waste generation across treatment routes were then recalculated.
3. **Derivation of end-of-life (EOL) proportions** – The EACO survey covered 17 UNU-KEYs. End-of-life proportions across these, split by household or business respondents, were derived from the survey data. Non-informative responses e.g. "don't know" and "refused" were removed, as well as answers indicating continuation of the EEE goods in the stock e.g. "resale" and "stockpiling". Survey responses describing similar pathways were grouped into a consistent set of categories.[17] Routes for other UNU-KEYs not covered by the survey were estimated by, within each Waste CAT category that the surveyed UNU-KEYs belong to, computing the average (weighted by tonnes of e-waste) collection-route distribution across UNU-KEYs that have data, then assigning that average distribution to UNU-KEYs that do not. For the Waste CATs for which their associated UNU-KEYs were not captured in the EACO survey, we take a weighted average across all UNU-KEYs to estimate disposal pathways.
4. **Calculation of disposal flows** – Waste generation disaggregated by county and institutional sector was combined with the disposal route shares varying by county, to estimate flows per treatment pathway for each UNU-KEY. These flows were aggregated to the Waste CAT and total level. Figures for formal collection and recycling were calculated based on reported quantities going to 'e-waste collection centres' and 'e-waste collection pick-ups' and cross-checked against results from a survey issued to e-waste recyclers by UNITAR in 2025 as well as other data reported and retrieved on recycler throughput in Kenya.

[15] I.e. assuming that the most recent year for which data are available applies to those years for which no data is held.
[16] It was considered robust to apply this split at the point of waste generation as opposed to POM, due to the proportions remaining relatively constant across the time-series.
[17] Open text "other" responses were reviewed and reclassified into existing categories where possible, while responses that could not be reliably interpreted were excluded. Additional interpretation rules were applied to improve consistency. Transactions involving repair shops were interpreted broadly to include cases where devices were left without explicit sale and were grouped under reuse pathways. Similarly, sales to friends, informal markets, or secondary channels were consolidated under reuse or resale categories, including cases where devices had been partially dismantled. Where multiple disposal routes were reported within a single response, these were apportioned across the relevant categories. Where "other" responses could not be reliably interpreted or mapped to an existing category, they were excluded from the analysis.

The mappings between the EACO survey response categories and pathways presented in this report are shown below.

EACO survey response	Standardised disposal pathway
Brought to an e-waste collection centre	E-waste collection centre
Picked up by an e-waste collection centre	E-waste collection pick-up
Collection by a door-to-door informal worker	Collection by door-to-door informal worker
Scrap collection[18]	Scrap collection
Brought to a County designated drop off point [only for e-waste]	Other collection
Brought to a drop off point for e-waste	Other collection
Brought to a County designated drop off point [for many types of recyclables]	Other collection
Picked up from home by the company that sold me the product	Other collection

EACO survey response	Standardised disposal pathway
County picked up from home	Other collection
Disposed of in the mixed municipal solid waste bin	Mixed municipal waste collection
Burn/bury[18]	Leakage / other
Theft/lost[18]	Leakage / other
Don't know	Excluded
Refused	Excluded
Do not remember	Excluded
Sold to a refurbished or repair shop	Excluded (continued use)
Sold online	Excluded (continued use)
Donated	Excluded (continued use)
Stockpiled[18]	Excluded (continuation in stock)

[18] Category added following manual classification of open text responses.

Annex C. Data tables

EEE POM, 2021 -2025

EU-6 PV	Full name	2021	2022	2023	2024	2025
1	Temperature exchange equipment	11,397	8,830	12,387	16,781	19,076
2	Screens, monitors, and equipment containing screens (..)	5,742	7,562	6,449	8,192	8,562
3	Lamps	1,691	1,394	2,215	2,145	2,291
4a	Large equipment (excluding photovoltaic panels)	29,609	23,441	15,140	17,736	24,337
4b	Photovoltaic panels (incl. inverters)	5,359	8,879	7,196	4,493	1,774
5	Small equipment	31,710	28,977	32,988	41,704	46,718
6	Small IT and telecommunication equipment	5,855	4,582	5,307	5,945	6,807
	Total	**91,364**	**83,665**	**81,682**	**96,997**	**109,565**

E-waste Generated, 2021 -2025

EU-6 PV	Full name	2021	2022	2023	2024	2025
1	Temperature exchange equipment	10,319	10,557	10,776	11,003	10,996
2	Screens, monitors, and equipment containing screens (..)	5,065	5,297	5,513	5,715	6,069
3	Lamps	5,142	5,158	5,039	4,844	4,421
4a	Large equipment (excluding photovoltaic panels)	4,175	4,657	5,169	5,680	5,920
4b	Photovoltaic panels (incl. inverters)	0	0	1	2	3
5	Small equipment	16,812	17,821	18,694	19,737	21,942
6	Small IT and telecommunication equipment	6,947	6,871	6,732	6,581	6,608
	Total	**48,461**	**50,361**	**51,924**	**53,561**	**55,960**

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