

Draft ECOWAS E-Waste Regional Strategy

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1.0 INTRODUCTION

The importance of ICT , driven by the extensive use of computers and mobile phones, in national development in Africa as a region and the ECOWAS sub-region is phenomenal as it drives internet access penetration, commerce, education, banking, governance and a valuable tool in bridging the digital divide between developed and developing countries. The uncontrollable generation of e-waste in developed countries which drives a global WEEE or e-waste trade with dumping of e-waste in developing countries is one of the dark sides of ICT. The globalization of trade in used electrical electronic equipment (UEEE) and waste electrical electronic (WEEE) has made the ECOWAS region , and in particular Ghana and Nigeria as destination hot spots for illegal trade in, and dumping of e-waste from developed to developing countries.

The amount of Electrical Electronic Equipment (EEE) consumed in Africa might seem negligible compared to the rest of the world, as Africa's of global consumption of personal computers is about 1.5% (Mueller et al. 2009). EEE comprise a wide range of products which include computers, mobile phones, TVs, printers, refrigerators, etc. Nevertheless, a comparatively low share of EEE can produce significant amounts of waste electrical and electronic equipment. On top of e-waste generated from domestic consumption, a considerable amount is – intentionally or unintentionally – imported via the trade of used EEE (Schmidt 2006). There has been considerable media attention based on a few reports pointing to this issue, especially in Nigeria (Puckett et al. 2005) and Ghana (Brigden et al. 2008). In addition, the studies executed under the umbrella of the E-waste Africa project, as well as other African assessments (Magashi and Schluep 2011; Wasswa and Schluep 2008; Finlay and Liechti 2008), have shown that Africa's consumption of EEE is growing fast, which will in turn increase the amount of e-waste generated in the future (Schluep, Hagelueken, et al. 2009).

The United Nations Environment Program (UNEP) estimates that up to 50- million tons of e-waste are generated annually worldwide (UNEP, 2005), with majorly from Europe and USA. In fact e-waste is one of the emerging global environmental problems of the 21st century (SAICM ICCM2 2009; UNEP Foresight Process 2012) . Existing legislation in developed countries compels them to dispose of e-waste in an environmentally sound manner, which is usually expensive. These countries have decided to externalize the cost of unsound e-waste management and adopted a cheaper, though illegal alternative of disposal by dumping in least developed countries. Illegal shipments, which contravene the Basel convention, or through legal shipments but deceitfully presented as donations.

Significant portions of this e-waste from developed countries end up in Africa and principally in ECOWAS countries. This is due to the level of poverty on the continent, an attempt to bridge the digital divide, a thriving informal sector making a living on e-waste, ignorance of the harmful effects of e-waste, weak legislative infrastructure, existence of crude processing methods which pose risk to the environment and human health, lack of enforcement of extant regulations which may not have any bearing on e-waste, and not the least relatively porous national borders. The hazardous substances in e-waste include lead, mercury, beryllium, cadmium, and brominated flame-retardants (BFRs). Nonetheless e-waste also contains valuable components such as iron, aluminium, copper as well as precious metals such as gold, silver, platinum, palladium, rhodium, and ruthenium.

Most countries in the ECOWAS region currently lack the capacity and needed infrastructure to collect and manage e-waste in an environmentally sound manner, specifically, lack of or inadequate database on e-waste generation and flow; low legislative and institutional capacities; general low awareness on the dangers posed by e-waste; lack of technical and logistical know-how, also the inability to exploit profitably the economic and entrepreneurship potentials in e-waste

1.1 Imports of new, used EEE and E-Waste Generation in ECOWAS Region.

In the ECOWAS region, e-waste is either internally generated or imported illegally as “second hand” goods in an attempt to bridge the so-called digital divide. Most of the consumed EEE is imported into ECOWAS states, while there are only some assembling companies, for example, in Nigeria (BCCC-Nigeria et al. 2011). Quantitative data for EEE is summarized in Table 1 based on the respective e-waste country assessment reports from the SBC E-waste Africa Project. As national and international import statistics do not distinguish between new and used EEE imports, special field investigations were conducted, concentrating on assessing the import flow of used and end-of-life EEE into ECOWAS states namely: Benin, Cote D'Ivoire, Ghana, Liberia and Nigeria respectively. The results in Table 1 indicate that about 1.5 million tons of EEE (e-products) are imported annually in these countries with Nigeria alone importing about 1.2 million tons annually or 80% of total EEE imports in the five states. Data on EEE in use for the five states is about 7 million tons per annum with Nigerian EEE products in use representing over 90% of total products in use. About 1.4 million tons of e-waste are generated annually in the five countries with Nigeria generating about 1.1 tons per annum (over 80% of e-waste generated overall) followed by Ghana about 180,000 tons per annum; and Benin as the least generator of e-waste with about 10,000 tons per annum.

Table 1.0 : Quantitative data for EEE in Benin, Côte d’Ivoire, Ghana, Liberia¹ and Nigeria related to imports, installed base and e-waste generated.

Country	Year	Imports of EEE		EEE in use		E-waste generated	
		tonnes/ year	thereof used EEE	tonnes	kg/ inhabitant	tonnes/ year	Thereof collected
Benin	2009	16'000	30%	55'000	6.32	9'700	N/A
Côte d’Ivoire	2009	25,000	48%	100,000	4,8	15,000	N/A
Ghana	2009	215,000	70%	984,000	41.0	179,000	172,000
Liberia	2009	3,500	10%	17,000	4.6	N/A	N/A
Nigeria	2010	1,200,000	35-70%	6,800,000	44.0	1,100,000	N/A

Note: The data presented is based on the e-waste country assessment reports of the respective countries: Benin (CSEE et al. 2011), , Côte d’Ivoire (CECAF et al. 2011), Ghana (Green Advocacy et al. 2011), Liberia (N.C. Sanitor's & Strother et al. 2011), Nigeria (BCCC-Nigeria et al. 2011)

The huge volume of e-waste entering into the ECOWAS region , especially Nigeria and Ghana has strengthened the informal sectors who are involved in the Informal collection, dismantling, repairing and recycling of electrical electronic equipment. Though the two countries have a fairly organized sector, their method or processing of e-waste is crude and unhealthy. This sometimes involves crude dismantling, and open air burning of e-waste. This method is proven to be harmful to human health and the environment, because of the exposure to toxic chemicals such as dioxins, through their release into the environment.

There is an increasing global demand for base and precious metals worldwide. Some of these scarce resources can be recovered from e-waste and thus presents a huge business opportunity that can be exploiting to the benefit of developing countries. The current crude practice of e-waste management in ECOWAS however produces low quality and quantity resources which do not attract good price on the international market. Though high tech methods of materials recovery is not readily available in Africa, the availability of abundant and cheap labour in the continent could be used to advantage in the environmentally sound recovery of metals through manual dismantling and sorting. This will ensure improved quality and higher yield of materials

¹ In Liberia, the scope of the assessment was narrower than in other project countries and therefore more limited data on EEE imports, used and e-waste is available.

recovery. The dismantled parts can be sold on the international market to specialized recycling enterprises in Europe and Japan, which are capable of refining scarce metals from e-waste.

Several initiatives to solve the e-waste problem have arisen as a result of the growing awareness of the dangers of improperly managed e-waste include;

i. The Conference of Parties of the Basel Convention.

This danger was affirmed by the Conference of parties of the Basel Convention. In 2002, The Basel Convention has addressed the issue of e-waste at the 6th Meeting of Conference of Parties (COP-6) in Geneva, this was further strengthened by the Nairobi Declaration and adoption on ESM of E-Waste at COP8; COP9 in Bali (June 2008) adopted a work plan for the continuation of work already ongoing and new activities these included Private-public partnerships, Development of Technical Guidelines on transboundary movement of e-waste, Implementation programmes for ESM of e-wastes in Asia, Africa, and South America. The Basel Convention also initiated new programmes on e-waste these included ESM of E-Waste, Mobile Phone Partnership Initiative (MPPI), Partnership for Action on Computing Equipment (PACE)

ii. Basel Convention E-Waste Africa Project

The Pan-African Forum on E-waste, which discussed the results of the Basel Convention E-Waste Africa project, held in Nairobi, Kenya in 14-16 March 2012 reported that *“The growing e-waste volumes generated worldwide together with the lack or even absence of well-organized collection and management systems in Africa, where a disproportionate amount of this waste ends up, threatens Africa’s environment, its national economies and the health of local communities”*.

The forum identified a set of priorities for the African region as follows *:to support development of a regional approach for the legal transboundary movements and the environmentally sound management of e-waste for the African continent to protect human health and the environment as well as to promote opportunities for social and economic development.*

Common findings from the e-waste programmes carried out thus far in Africa indicates that legislative framework for management of e-waste is either not properly enforced, weak or non-existent; e-waste management provides employment to a significant portion of the populace in countries in the continent; the informal sector plays a huge role in e-waste management; there is a growing volume of e-waste, both imported and internally generated on the continent; the economic benefits of e-waste are not being reaped; ESM of e-waste is still a big problem in the region as well as lack of political will..

According to Prof. Oladele Osibanjo, Director of Basel Convention Regional Coordinating Centre for the African Region (Pan E Waste Forum Meeting Report 2012), “the sustainable solutions for e-waste management in Africa require measures aimed at imports and exports

control, collection and recycling, policy and legislation that incorporate extended producer responsibility, recognize the important role of the informal sector, promote awareness raising and education, as well as compliance monitoring and enforcement. Appropriate health and safety measures for those involved in recycling, as well as environmentally sound practices, should be ensured,”

1.3 Rationale for the ECOWAS E Waste Strategy

The ECOWAS E-waste Strategy is the follow up to the studies carried out in the Secretariat of the Basel Convention (SBC) E-waste Africa Project under components 1, 2, 3 and 4, and proffer strategic and effective solutions to the challenges and opportunities identified.. One of the drivers for this action is that electronics business consumption is accelerating in the region; there is high growth rates and markets for new products and a high market share of second hand products. E-waste impacts health and the environment if not properly treated and recycled. Nonetheless all e-waste can be collected and properly treated as a profitable business by applying international standards to protect.

The ECOWAS e-waste strategy is outlined under the following areas :

❖ *Policy and Legislation*

- Domestication of Chemicals and Waste Related Conventions into national and regional Law
- Regulation based on life cycle approach that covers all aspects of the electrical/electronic sector from cradle to grave
- Reactivation of the African/Regional Toxic waste Dump Watch Program to monitor and check clandestine importation and dumping of hazardous substances into Nigeria
- Extended Producer Responsibility (EPR)
- Mandatory Registration of UEEE importers &E-waste Recycling/Refurbishing Companies
- Guide for Importers of UEEE
- Intensive Education and Awareness Creation Campaigns

❖ *Business and Financing*

❖ *Capacity building /Technology and Skills*

❖ *Compliance Monitoring, Control and enforcement of regulations*

❖ *Marketing,*

❖ *Awareness Raising and Education*

2.0 SCOPE AND OBJECTIVES

The objectives of the ECOWAS e-waste strategy are therefore to:

- Strengthen existing institutional framework for collaboration in controlling importation of used EEE, encourage cooperation between different government agencies and three tiers of government in ECOWAS states , African countries and regional organisations ;
- Maintain accurate records on the importation of both new and used EEE;
- Awareness raising on harmful effects of current e-waste management practices at all levels (public, recyclers, lawmakers, media & regulators) ; build capacity on ESM of e-waste;
- Strengthen enforcement on ESM of e-waste, increase compliance level;
- Encourage voluntary hand-in/take back system and at all levels of governance and the public;
- Enforce existing policy/regulations on importation and management of EEE throughout its life cycle and on hazardous substances; mandatory licensing of importers of EEE and use of guidelines on importation of EEE;
- Establish/Develop a sustainable business model for handling e-waste in ECOWAS states in conjunction with the informal sector (EEE dealers association)that would eventually confer ownership on them;
- Establish a training center for ESM of e-waste and good business practice, which would eventually be run by the dealers association;
- Availability of ready market to dispose of valuable materials recovered;
- Establish a formal and efficient WEEE recycling industry, nation-wide;
- Establish regional associations to ensure regional integration in the WEEE recycling industry, and common policing of our borders.

3.0 FRAMEWORK

The e-waste sector provides thousands of people in the informal sector with jobs and livelihood, in spite of the health and environmental risks the operations pose. Figure 3.1 identifies the various stages of the process in the recycling chain, indicating hotspots which are sources of concern and requiring attention.

For example the second-hand industry generated around 200'000 tonnes of e-waste in Nigeria in 2010. About half of the amount originated from the (illegal) import of used EEE in a non-working and non-repairable state. The other half came from repair and refurbishment businesses out of appliances from domestic consumers.

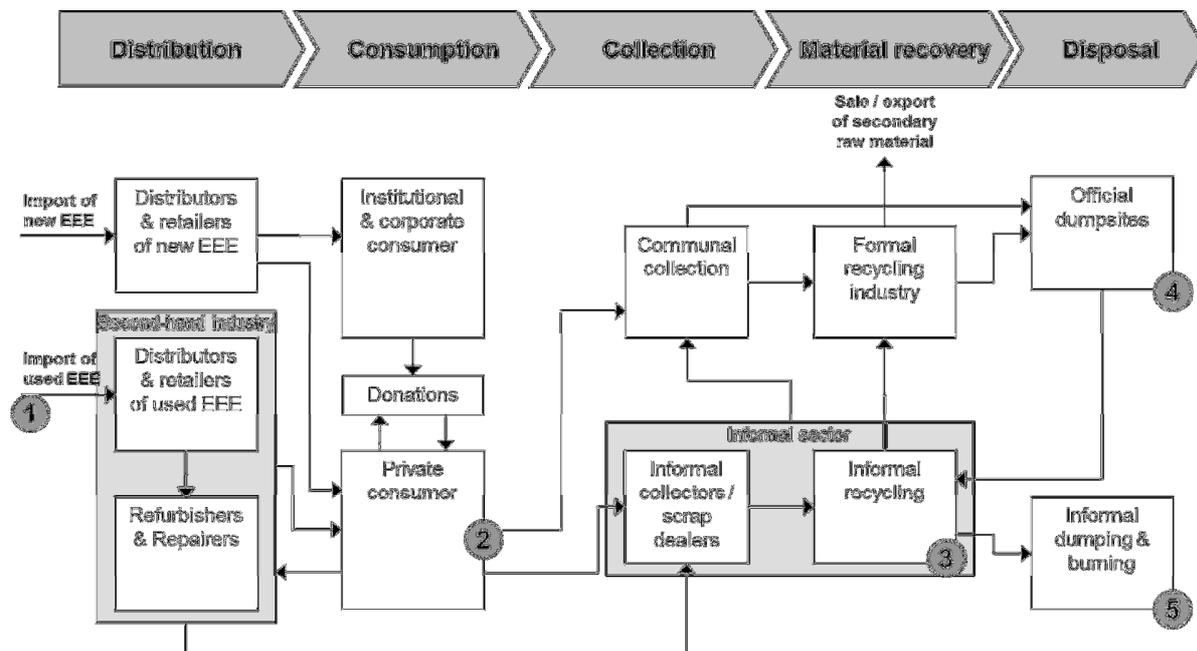


Figure 3.1: Massflow chart indicating hotspots in the Nigerian recycling chain

The volume of imported end of life EEE has reduced due to stricter enforcement by NESREA . Hence imports into Nigeria has experienced a decline since 2010. In spite of the drastic reduction, Nigeria still has the problem of how to manage the huge volume of UEEE that have reached their end-of-life and those that were internally generated. This is due to lack of necessary infrastructure and the required skill to manage the waste in an ESM.

There are three ‘Hot Spots’ identified in the mass flow chart (figure 3.1) that need intervention, these are:

- 1. The second hand industry**
 - Importers , Distributors and Retailers of Second Hand EEE;
 - Refurbishers & Repairers
- 2. Informal sector**
 - Collectors & Scrap dealers
 - Informal recycling
- 3. Informal Dumping and Open Burning**

1) The second hand industry

Using Nigeria as case study, prior to 2010, the enforcement on quality of UEEE imported and clamp down on illegal imports of UEEE/e-waste into Nigeria was slack. During this period, about one third of the imported used EEE were non-functional and could be described as illegal imports.

- About 25 percent of the imported EEE were non-functional, and added to the internally generated WEEE.
- About 30 percent of the imported EEE had to be repaired or refurbished to get them functioning. The refurbishing is usually carried out in an environmentally unsound manner, without the required PPE. These refurbished items were naturally expected to have a shorter lifespan compared to those which arrived in good working condition and new products. This situation had the potential of increasing the volume of e-waste that would end up in illegal dumpsites or incineration.
- Some imported EEE were not repairable, but were kept in storage and used as spare parts for refurbishing other EEE.

2) Informal sector

E-waste collection, dismantling and disposal operations in Nigeria, Ghana, Benin and Cote D'Ivoire are extremely polluting and likely to be very damaging to human health and the environment. The crude methods used include bashing open CRTs, burning of cables to recover copper and possibly also acid leaching of gold from printed circuit boards.

3) Informal dumping and burning

A significant portion of e-waste ends up in illegal dump sites. Recyclers salvage the valuable parts of the e-waste and they are either disposed of at informal dumpsites or incinerated. This practice has the potentials of causing air, soil and water pollution which is a threat to the environment and to human health.

Intervention Mechanisms

In order to provide solution to the problem areas identified as hot spots above, the following intervention mechanisms would be employed;

Policy and Legislation

- Domestication of Chemicals and Waste Related Conventions into national Laws
- Development and Implementation of Regional Regulation based on life cycle approach that covers all aspects of the electrical/electronic sector from cradle to grave
- Reactivation/strengthening of the Regional Toxic waste Dump Watch Program, monitor and check clandestine importation and dumping of hazardous substances into ECOWAS states.
- Extended Producer Responsibility
- Mandatory Registration of UEEE importers & E-waste Recycling Companies

- Guide for Importers of UEEE
- Intensive Education and Awareness Creation Campaigns

Business and Financing

Capacity building /Technology and Skills

Compliance Monitoring, Control and enforcement of regulations

Marketing,

Promote Awareness Raising and Education

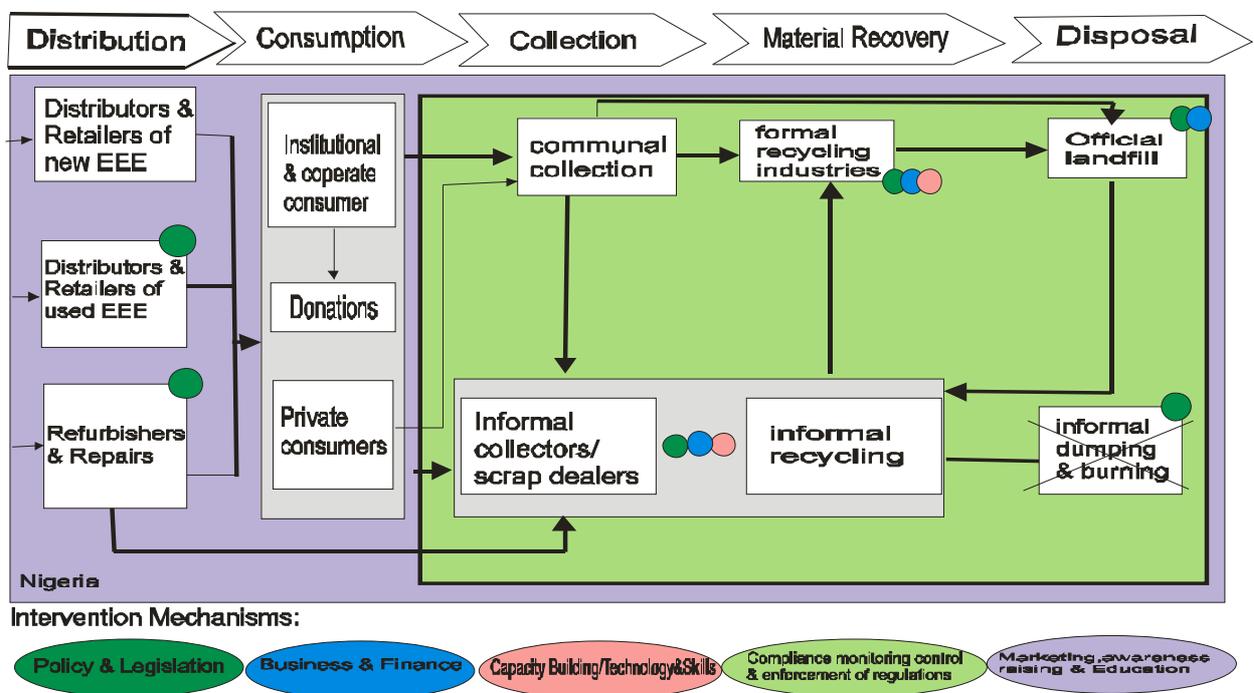


Figure 3.2: Massflow Chart indicating intervention mechanisms

4.0 STRATEGY

4.1 Policy and Legislation

The ECOWAS Environmental Policy provides for the protection and improvement of the quality of water, air, land, forest and wildlife of ECOWAS states through municipal waste management

and sanitation, industrial pollution control, oil and gas pollution control, afforestation and conservation of bio-diversity and wildlife, combating desertification and the mitigating effects of drought, managing mining sites and restoring derelict lands, erosion and coastal zone management

Consequently, subsidiary laws and regulations have been made by member states, and international conventions and other instruments entered into pursuant to the constitution's set objectives. These laws are intervention tools for the ESM of e-waste.

These include in Nigeria for example :

- International guidelines and conventions to which Nigeria is a signatory.
- National policy on Environment (1989) and reviewed in 1999.
- Environmental Impact Assessment Act Cap E12
- Harmful Waste (Special Criminal Provisions) Act Cap HI
- The National Environmental (Sanitation and Waste Control), Regulation 2009
- Guide for Importers of UEEE
- The National Environmental (Electrical/Electronic Sector), Regulations 2011.

4.1.1 Domestication of Chemicals and Waste Related Conventions into National Laws

Member states of ECOWAS are a signatory to several international conventions and treaties that promote the maintenance of a sound environment with the ultimate goal of achieving sustainable development. Some of these conventions relevant to ESM of e-waste are:

- Basel Convention on transboundary movement of Hazardous wastes and their disposal,
- Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (1991).
- Montreal Protocol on Substance that Deplete the Ozone Layer 1987 (Ratified 1991).
- The Stockholm Convention on Persistent Organic Pollutants.

In order to strengthen existing national laws on e-waste management, there is an urgent need to domesticate these chemicals and waste related conventions into national laws.

4.1.2 Setting Up Of Task Force and Reactivation of National Toxic Dump Watch Programme

Africa – EU Network on the control of illegal traffic in e-waste has been established under the SBC E-Waste Africa Project.

4.1.3 A Testing and Certification System of Second Hand Items

There is need to develop a regional certification system for used EEE the region, For example UEEE imported into the ECOWAS region must be accompanied by Cargo Movement Requirement (CMR) document; Proof of evaluation/testing and certificate containing testing information on each item; Declaration of the liability by the importer (Letter of Indemnity); and copy of permit to import.

The aim is to ensure that used electrical and electronic equipment exported to the region is in working condition.

4.1.4 Extended Producer Responsibility (EPR)

The Nigerian e-waste regulation as well as the Ghanaian e-waste regulation under preparation incorporates the extended producer responsibility. This regulation makes it mandatory for all importers, exporters, manufacturers, assemblers, distributors, and retailers, of various brands of EEE products to subscribe to an Extended Producers' Responsibility (EPR) Program including the Buy Back scheme. The foundation of a regional approach to EPR has already been laid as some Original Equipment Manufacturers (OEMs) including HP, Dell, Nokia and Philips have formed an African OEM Alliance towards cooperative action in ensuring the effective implementation of the Take-back and the Extended Producer Responsibility Programme.

4.1.6 Mandatory Registration of Actors in the EEE Sector

E-waste Dismantlers

Mandatory registration of every dismantler. The facility and dismantling processes must comply with published regulatory standards or guidelines.

E-waste Refurbishers

Mandatory registration of refurbishers by regulatory authority in line with the regulation, refurbishers are required to submit details of e-waste generated on yearly basis; Ensure that the e-waste collected or generated during the process of refurbishing is safely transported to authorized collection centers or registered recyclers.

E-waste collection centers

The regulation requires operators of collection centers to obtain authorization in accordance with the procedures in the regulation. Operators are amongst other requirements expected to ensure that the e-waste collected are stored in a secured manner till these are sent to producer(s) or refurbisher (s) or dismantler (s) or recycler(s) as the case may be. They are also to ensure that their activities do not impact on the environment negatively.

E-waste Recyclers

Every recycler must obtain registration from regulatory agency in accordance with the procedures prescribed in the Regulations. They are also to ensure that the facility and recycling processes are in accordance with the standards laid down in any guideline published by NESREA, the regulatory agency, from time to time. Finally they are to make available all records to the Agency for inspection

4.2 Business and Financing

- Initiate consultations with major manufacturers and local dealers of electrical and electronic equipment on implementation of Extended Producer Responsibility in ECOWAS region
- Administrative fee paid by importers and manufacturers to EPAs would be used in the promotion of environmentally sound management of WEEE; and create awareness through publications, advertisements, posters, or by any other means of communication and information booklets on the handling and disposal of the equipment.
- Train informal e-waste operators in improving quality and quantity of valuable materials recovered and alternative income generating activities. Also expose/identify downstream markets (local and international) where fractions can be taken.
- Establishment of recycling plant/ demanufacturing facility in Nigeria, to have a regional coverage, to take care of WEEE. The facility would utilize low-tech dismantling method that are environmentally sound but have highest possible recovery rates of valuable metals.
- Establish cooperation with international smelters for fractions that cannot be treated in Nigeria.

4.3 Technology and Skills

- Implementation of PACE guidelines in ECOWAS region.
- Establishment of a regional training workshop/ Centre for ESM of e-waste.
- Provide training for recyclers, refurbishers, dismantlers and other practitioners in the EEE sector on ESM of e-waste. Establish the practice of environmentally sound materials recovery operations, thereby improving quality of materials recovered.
- Recognize/ formalize the informal sector SMEs in the e-waste channel and to streamline their activities.
- Design and build a demonstration plant/information centre to promote improved e-waste dismantling and refurbishment
- Promote the in-country fabrication and sale of items from scrap and e-wastes e.g. jewellery from old computers, products cast from compressor of refrigerators made into local pots and other furniture items etc.

- Make provision for the temporary storage of hazardous components of e-waste (e.g. cathode ray tubes (CRTs)) that are of no commercial value and other hazardous wastes. Provide designated disposal site for the final disposal in an environmentally sound manner.
- Establish collection centres in line with regulatory requirements in easily accessible locations.
- Recycling sites, Re-use practices, and auditing recycling activities should be encouraged within communities in specifically designated areas, near e-waste generation source.

4.4 *Compliance Monitoring, Control and enforcement*

- Enforce and ensure high compliance level of existing policy/regulations on importation and management of EEE throughout its life cycle and on hazardous substances; mandatory licensing of importers of EEE and use of guidelines on importation of EEE;
- Control of imports of EEE into ECOWAS states , to eliminate importation of e-waste and end-of-life EEE.
- Provision of infrastructural support for practitioners in the EEE sector such as official disposal sites, adequate social amenities at the site of operations of the scrap workers

4.5 *Marketing*

- Hold consultations with relevant government agencies, importers of EEE, associations of scrap dealers and refurbishers on draft e-waste management strategy and prepare budget for interventions.
- Hold sensitization/awareness programme for policy-makers and other relevant stakeholders to gather support for the successful implementation of the national e-waste strategy.
- Organise public awareness campaigns on the existence of the guide for Importers of UEEE
- Design and implement information and training programmes for informal e-waste operators on environmentally sound collection, transportation, storage and dismantling e-wastes. Use a train-the-trainer approach to ensure that many informal operators benefit from the training.
- Use the print and electronic media to increase public awareness on the e-waste challenge

4.6 *Promote Awareness Raising and Education*

- Continuous investigation and dissemination of information (to relevant stakeholders) on new findings on the environmental and health impacts of current e-waste management practices.

- Building public awareness about possibilities and importance of recycling obsolete EEE in an environmental sound manner in Nigeria.
- Hold sensitization programmes for regulators, members of the EU-Africa Network on the EU-Africa Network on the Control of illegal traffic in e-waste. As well as other initiatives such as INECE.
- Organise and implement public awareness/information campaigns on dangers of e-waste in collaboration with NGOs and relevant government agencies.
- Design and implement information and training programmes for informal e-waste operators on environmentally sound collection, transportation, storage and dismantling and disposal of e-wastes.
- Use the print and electronic media to increase awareness of hazards associated with improper handling of e-waste.

5.0 GENERAL RECOMMENDATIONS

- Siting of clearly designated and accessible official landfills in the major cities to discourage illegal dumping and burning of e-waste.
- The role of the informal sector in the e-waste sector should be integrated into the ESM of e-waste.
- There is a need for training of the informal sector to reduce and avoid adverse impacts on the public health and the environment from unsound e-waste management practices.
- Registration of practitioners in the EEE sector as required by regulation should be enforced to ensure ESM of e-waste.
- Formal recycling, which incorporates environmentally friendly practices, must be encouraged to discourage informal recycling.
- Strict monitoring of the activities of importers of second hand EEE to ensure that they meet the regulatory standards for imports.
- Collection points must be clearly designated to ensure that the WEEE is sent to the refineries directly or to the approved recycling centres, instead of the present practice of sending to the informal dumpsites.
- The current activities of scavengers should be monitored and controlled so that it can be carried out in an environmentally sound manner and also that they get good value for their efforts.
- Stop the current practise of disposal of hazardous constituents in WEEE which can have negative impacts on the environment and human health with municipal waste.
- Proper implementation of the Take-back and the Extended Producer Responsibility Programmes in ECOWS states,
- Setting up of basic and/or state-of-the-art recycling and waste disposal facilities.
- Increase awareness of the public on the dangers and problems associated with e-waste.

- Financial mechanisms should be put in place by producers to facilitate collection and environmentally sound management of all e-waste including non-valuable and/or hazardous items

- **6.0 ROADMAP AND OUTLOOK**

The road map for the ECOWAS E Waste strategy covers the following areas:

- Policy and Legislation
 - Domestication of Chemicals and Waste Related Conventions into national Laws and promote implementation of regional MEAs such as Bamako Convention.
 - Regulation based on life cycle approach that covers all aspects of the electrical/electronic sector from cradle to grave
 - Reactivation of the National Toxic waste Dump Watch Programme (NTWDWP) to monitor and check clandestine importation and dumping of hazardous substances into Nigeria
 - Extended Producer Responsibility (EPR)
 - Mandatory Registration of UEEE importers & E-waste Recycling/Refurbishing Companies
 - Guide for Importers of UEEE
 - Intensive Education and Awareness Creation Campaigns
- Business and Financing
- Capacity building /Technology and Skills
- Compliance Monitoring, Control and enforcement of regulations
- Marketing,
- Awareness Raising and Education

Table 6.1 : The timeframes for the implementation span from short to medium term goals (up to 2013).

Phase	Action/Goal	Timeframe	Responsibility
Policy and Legislation			
Medium term	<ul style="list-style-type: none"> • Mobilize financial resources 		ECOWAS Commission
	<ul style="list-style-type: none"> • Domestication of Chemicals and Waste Related Conventions in National Law 		BCRC-Senegal, BCCC-Africa, Governments
	<ul style="list-style-type: none"> • Engaging all Stakeholders in the member states to participate in the 		BCRC-Senegal,

	development of ECOWAS E-waste Regional legislation. .		BCCC-Africa, Governments
Business and Financing			
Short term –	<ul style="list-style-type: none"> • Design acceptable business model adaptable to country situation 		BCCC-Africa, BCRC-Senegal ECOWAS Commission , Private Sector
	<ul style="list-style-type: none"> • Institutionalize extended producer responsibility 		BCCC-Africa, BCRC-Senegal ECOWAS Commission, Governments, OEMs
Medium term –	<ul style="list-style-type: none"> • Form regional WEEE Scrap Dealers Associations (refurbishes, recycler, collectors) 		BCCC-Africa, BCRC-Senegal, Informal sector
	<ul style="list-style-type: none"> • Set up WEEE Management (including recycling) Fund 		BCCC-Africa, BCRC-Senegal ECOWAS Commission, Governments, OEMs
	<ul style="list-style-type: none"> • Levy on Imports of new and used EEE 		Governments
	<ul style="list-style-type: none"> • Establish cooperation with international smelters for fractions that cannot be treated in the sub region. 		BCCC-Africa, BCRC-Senegal, Informal sector, formal sector associations.
Capacity building /Technology and Skills			
Medium term –	<ul style="list-style-type: none"> • Government planning and approval to Construct/establish dismantling and recycling centres 		OEMs, Governments, Informal sector
Medium term –	<ul style="list-style-type: none"> • Establish Collection Centres 		Governments, OEMs
	<ul style="list-style-type: none"> • Establish the practice of environmentally sound materials recovery operations, thereby improving quality of materials recovered. 		BCCC-Africa, BCRC – Senegal, OEMs

	<ul style="list-style-type: none"> • Training and capacity building on ESM of e-waste & hazardous components (e.g. CRTs) 		BCCC-Africa, BCRC-Senegal, OEMs
	<ul style="list-style-type: none"> • Management of Plastic Components(including other inert parts) 		BCCC-Africa, BCRC-Senegal, OEMs
Compliance Monitoring Control & Enforcement of Regulations			
Medium – term	<ul style="list-style-type: none"> • Registration of EEE-dismantlers, refurbishers collection centers & recyclers. • Mandatory registration of every importer of UEEE (UEEE would be accompanied by: Cargo Movement Requirement (CMR) document; Proof of evaluation/testing and certificate containing testing information on each item; Declaration of the liability by the importer (Letter of Indemnity); and copy of permit to import. 		Governments
	<ul style="list-style-type: none"> • Proper implementation of the Take-back and the Extended Producer Responsibility Programmes in Nigeria 		Governments, OEMs
	<ul style="list-style-type: none"> • Continuous efforts to control/check the influx of e-waste into the country 		Governments, Customs, Ports Authority, OEMs, Informal sector etc
Marketing, Education and Awareness			
Short – Medium term	<ul style="list-style-type: none"> • Establish the practice of environmentally sound materials recovery operations, thereby improving quality of materials recovered. 		BCCC-Africa, BCRC-Senegal, Governments, Investors, OEMs ,
	<ul style="list-style-type: none"> • Promote the in-country fabrication and sale of items from scrap and e-wastes; e.g. jewelry from old computers, products cast from compressor of refrigerators made into local pots and other furniture items 		BCCC-Africa, BCRC-Senegal, Governments, Investors, OEMs
	<ul style="list-style-type: none"> • Awareness creation on the dangers and problems associated with e-waste 		BCCC-Africa, BCCC-Africa, BCRC-Senegal,

	<ul style="list-style-type: none"> • Build public awareness about possibilities and importance of recycling obsolete EEE in an environmental sound manner in sub region 		Governments, Investors, OEMs
	<ul style="list-style-type: none"> • Hold sensitization programmes for regulators, members of the National Toxic waste Dump Watch Programme (NTWDWP), policy-makers, to promote the enforcement of current regulations on control and management of e-waste and other hazardous waste, and where necessary promulgate new laws 		BCCC-Africa, BCRC-Senegal, Governments, Investors, OEMs
	<ul style="list-style-type: none"> • Establishment of a regional training workshop/ Centre for ESM of e-waste. 		BCCC-Africa, BCRC-Senegal, Governments, Investors, OEMs
	<ul style="list-style-type: none"> • Public notices on available collection points and recycling centres 		BCCC-Africa, BCRC-Senegal, Governments, Investors, OEMs, CSOs
	<ul style="list-style-type: none"> • Message Development and TV documentaries 		BCCC-Africa, BCRC-Senegal, Governments, Investors, OEMs, CSOs
	<ul style="list-style-type: none"> • Billboards, Banners, Posters, Flyers, T Shirts, Caps 		BCCC-Africa, BCRC-Senegal, Governments, Investors, OEMs, CSOs
	<ul style="list-style-type: none"> • Advertisements on take back scheme 		BCCC-Africa, BCRC-Senegal, Governments, Investors, OEMs, CSOs
	<ul style="list-style-type: none"> • Design and implement information and training programmes for informal e-waste operators on environmentally sound collection, transportation, 		BCCC-Africa, BCRC-Senegal, Governments, Investors, OEMs, CSOs

	storage and dismantling and disposal of e-wastes.		
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To ensure sustainability of the interventions:

- ✚ Establish the practice of environmentally sound materials recovery operations, thereby improving quality of materials recovered, protecting health and the environment.
- ✚ A business model will be designed in collaboration with major actors in (W)EEE management (regulators, BCCC-Africa, informal sector, Association of e-waste practitioners etc.) to create a sense of ownership. The model would be suitable/ adaptable to the national and sub regional business environment and the circumstances of the local industry.
- ✚ Establishment of a regional training workshop/ Centre in the region for ESM of e-waste. This centre will use the PACE guidelines and would operate a-train-the-trainers scheme. The establishment of the training center would be with the full support of the association. This is to ensure that the centre is eventually run by the association.
- ✚ The full implementation and enforcement of policy instruments guiding e-waste management in member States . The regulation will ensure mandatory registration of importers of (U)EEE and all categories of WEEE handlers as well as regulating the industry.
- ✚ Unity and strengthening of National Toxic waste Dump Watch Programme (NTWDWP).
- ✚ Implementation of Memorandum of Understanding signed e.g. in Nigeria with Standards Organisation of Nigeria, Consumer Protection Council Alaba International Market Amalgamated Traders Association and NESREA on the establishment of a task force to monitor the importation of e-waste and other substandard electrical/electronic goods into Nigeria.
- ✚ Awareness creation among the populace will ensure that all stakeholders are involved in the ESM of e-waste.
- ✚ Establishment of accessible collection/receiving centres, a financial incentive would increase level of compliance.
- ✚ The establishment of a management fund and payment of an import levy will provide sustainability for the future even beyond the duration of the SBC E-waste Project.

- ✦ Establishment of recycling and waste disposal facilities in the region based on sound business and health considerations..