E-WASTE MANAGEMENT IN BOTSWANA: SENSITISATION WORKSHOP. 05 MARCH 2015.

BOCRA

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1.0 Introduction

Electronic waste or e-waste in short, has been described as the fastest growing form of toxic waste in the world. Despite this, there is general lack of awareness or public concern about this ticking time bomb. Rapid advance in technology, changes in lifestyles, globalization and improvements in purchasing power have led to the uptake of consumer electronic equipment including communication equipment at an alarming rate resulting in substantial amounts of e-waste. This kind of waste is known to contain some of the most hazardous substances which when inappropriately handled can result in health and environmental crisis. The working definition of e-waste is “electronic equipment or products that have become obsolete or have reached the end of their useful state."

As part of its core mandate of consumer protection in the communication industry, Botswana Communications Regulatory Authority, (BOCRA) took a step to sensitize Batswana about the looming dangers of e-waste by organising a stakeholder workshop on e-waste. The workshop brought together stakeholders from across the communications sector as well as the media, government environmental experts, business and consumer activists.

The workshop was also meant to appreciate the experiences of stakeholders with regard to the management of e-waste. Furthermore, the workshop was meant to seek a way forward for the regulated sector in dealing with e-waste in order to enhance consumer protection and preserve the environment.

Following presentations and interactive discussions several observations and suggestions were made as a way forward in preparing the country to effectively manage e-waste. This report captures the proceedings of the workshop and concludes with the way forward.

2.0 Official Opening: Mr. Mphoeng Tamasiga

The workshop was officially opened by the Deputy Chief Executive of BOCRA Mr. Mphoeng Tamasiga who noted that the information era has resulted in the use of various electronic gadgets that enhance our everyday life. However many of them have a very short lifespan due to rapid advancement in technology and competition. As a result there are huge piles of obsolete and unused gadgets especially mobile phones, computers and related equipment which may not have been properly discarded. According to Mr. Tamasiga, the United Nations Development Program (UNDP), Global Partnership in Waste Management shows that the lifespan of computers has dropped dramatically in developed countries from six to two years between 1997 and 2005. Mobile phones on the other hand have an even lesser lifespan measured in months. It was therefore important to determine what should be done with gadgets that no longer serve their purposes.

Mr. Tamasiga noted that it was clear that a lot of the used mobile phones and other electronic and electrical equipment were discarded at landfills which are often scavenged by people who are then exposed to the potential dangers. Other gadgets are crushed while some are improperly discarded and even left for children to play with as toys.

Mr. Tamasiga furthermore noted that while clinical waste from hospitals and hazardous waste from such equipment as X-rays and nuclear power stations are usually disposed of in a manner that did not contribute to environmental harm, this principle, he said, was not applied to e-waste. He noted some of the harmful substances that are found in e-waste such as mercury, lead, cadmium and brominated flame retardants which are highly harmful and accordingly require that e-waste should not be treated as any ordinary waste. Compounding the problem of e-waste, he said was the general lack of public awareness of the dangers posed by e-waste as well as deficiencies in legislation dealing with e-waste.

Mr. Tamasiga also spoke of initiatives by the International Telecommunication Union, (ITU) in recognizing the impact of e-waste by calling for the development of a universal charger for use with different mobile phone models which would help reduce the proliferation of chargers and thus reduce waste. This move would lead to a reduction of global e-waste by 300 thousand tons annually. He called on the stakeholders to fully engage in coming up with a solution to the problem of e-waste in the country before it becomes a crisis.

Mr Tamasiga said that the lack of specific e-waste legislation in Botswana was also a problem on how the issue should be tackled.

3.0 Overview: Mr. Aaron Nyelesi

In his presentation of the overview of the workshop, Mr. Aaron Nyelesi, the Director of Corporate Communications and PR at BOCRA, highlighted several figures pointing to the magnitude of the problem of e-waste. He said the ITU estimates that there were 6.8 billion mobile subscriptions globally in 2013 with 5 billion people with access to television and 2.5 billion people with access to internet. The ICT sector alone was estimated to contribute up to 2.5 per cent of greenhouse gas emissions. It was estimated that sixty seven metric tons of electronic and electric equipment had been put out in the global market in 2013 alone with 53 million tons of e-waste disposed of.

Mr. Nyelesi also noted that global ICT targets by the ITU meant to promote access mean that the e-waste problem is likely to escalate. The targets are that 55 percent

of the households should have access to internet by 2020, with 60 percent of individuals using internet by 2020 and that these should be 40 percent more affordable. In developing countries, 50 percent of households should have access to internet by 2020, which means they should have access to computers or gadgets that enable them to be connected. It is also envisaged that in the least developed countries, ninety percent of rural populations should be covered by broadband infrastructure.

Mr. Nyelesi highlighted that it was planned that redundancy or waste should be reduced by fifty percent in 2020 with a reduction of five percent in the greenhouse gas emission by the ICT sector.

While the Botswana figures were not readily available, it was clear that there was substantial use of communication equipment in the form of mobile phones, fixed line telephony, computers and broadcasting equipment. Currently the country has eight percent teledensity for fixed line and more than three million mobile subscriptions. In Botswana, he said, most people have more than one mobile phone with some people having three sim cards. New mobile services such as mobile money have led to exponential growth in the use of these devices. By 2014, there were more than a quarter of a million mobile money subscriptions.

Concerning broadcasting, commercial radio reaches over one million people with state television and radio also expected to cover more than 90 per cent of the population. The figures meant that Botswana produces substantial amounts of e-waste. However there was little or no effort in managing the e-waste.

Mr. Nyelesi acknowledged that there were efforts by the Department of Waste Management which dealt with waste in general. However other stakeholders in the production of e-waste should play a significant role in the management of e-waste. He acknowledged that there was very little coordination in the management of waste at present. He said much still needed to be done especially in public education with regard to hazardous waste. He said BOCRA was therefore placing on the agenda the issue of e-waste, especially around the communication sector to sensitize the sector on the need to manage e-waste and to appreciate the experiences of stakeholders and challenges they face with regard to its management. The purpose of the workshop was to define a way forward in dealing with e-waste as well as to enhance consumer protection with regard to the disposal of e-waste in Botswana. This was in line with BOCRA's core mandate of consumer protection in the communication sector, he said.

4.0 Waste Management in Botswana: Mr. Frank Molaletsi

The workshop heard from Mr. Frank Molaletsi from the Department of Waste Management and Pollution Control. He touched on the waste management legislative framework and spoke of two key documents which guide waste management being the National Waste Management Strategy and the Waste Management Act of 1998. The Act established the Department of Waste Management and Pollution Control (DWMPC) whose mandate included, provision of policy direction and leadership in all matters pertaining to sanitation and waste management, enhancement of sectorial coordination and monitoring of the work of stakeholders in waste management, licensing of waste carriers, waste disposal sites and waste management facilities and administration of the provision of the Basel Convention on the trans-boundary movement of hazardous waste and their disposal.

The key stakeholders on issues of waste management have been identified as the Local Authorities and the private sector. The local authorities are charged with the responsibility of collecting waste and transporting it for safe disposal to approved landfills. They are also responsible for the management of disposal sites and landfills. The private sector on the other hand is responsible for the collect and transportation of waste for safe disposal at approved landfills.

On hazardous waste, Mr. Molaletsi said Botswana currently did not have a facility for handling hazardous waste. The only available facilities are incinerators for handling clinical waste. Other type of hazardous waste is exported to South Africa mainly by the private sector. Companies which engage in the removal of such waste have to first have an agreement and consent with the country to which such waste is destined.

On e-waste, Mr. Molaletsi acknowledged that not much has been done in that area as in other developing countries. He said this was an emerging issue and was not addressed by the Act when it was established in 1998.

He said electronic waste is a term generally applied to consumer electronic devices and gadgets that were near or at the end of their immediate useful life. These include discarded mobile phones, television sets, refrigerators, notebooks computers, computer game consoles and other electronic gadgets.

He reiterated that e-waste was a concern because it contains some of the most harmful toxins known to mankind such as mercury, lead, cadmium, arsenic, beryllium and brominated flame retardants.

Mr. Molaletsi said while currently e-waste was a contemporary issue though it is not addressed by the legislation. Initiatives that have been adopted which could improve the problem include the Botswana Waste Management strategy hierarchy. The strategy focuses on reduce, reuse and recycle, treat and disposing of the waste. The

strategy also promotes recovery of useful components from electronic equipment. This opens up opportunities for private sector businesses based on waste recovery and recycling. He said that old computers were refurbished and usable ones are given to primary schools particularly those in rural areas. He also said that the informal sector retrieves materials from e-waste for reuse or selling. He noted that DWMPC has recognized the deficiencies inherent in the legislation with regard to the management of e-waste. Consequently there were efforts to develop an integrated pollution control policy. This would holistically address all problems of waste in the country including e-waste. This would then inform subsequent legislation and other regulatory instruments.

The workshop was then shown a video produced in partnership with the Africa Institute on Hazardous Waste which highlighted the magnitude of the problem, the impact of e-waste in Botswana and some countries in southern Africa as well as initiatives by both governments and the private sector in dealing with e-waste.

5.0 Operator Experiences: Mr. Andria Malete BTCL

Mr Andria Malete from Botswana Telecommunications Company Limited, (BTCL) shared on the operator experience with e-waste. E-waste in the case of BTCL was generated by de-commissioned networks, power supply equipment and personal premises equipment. Once they became unserviceable they were considered scrap and thus sold to scrap dealers. The scrap dealers then dispose of the equipment as they best know how without BTCL guiding them.

Mr. Malete noted that their networks contain substantial radioactive components in the form of clocking equipment. Such equipment was dealt with under the Radiation Protection Act. With regard to power supplies they contain hazardous elements such as lead. The current arrangement was that contractors who supply the batteries buy them back before replacing with new ones. He said that unserviceable power/generators are disposed of through public auctions.

Regarding customer premises equipment, these are collected from the customers and sold to scrap dealers who then remove any useful components and dispose of the rest. He said they had no measures in place to educate customers on how to deal with obsolete equipment such as mobile handsets. He called for such measures by the service providers. As a take home, he said service providers should consult on what measures should be taken to engage consumers on how best to handle the mobile handsets and other customer premises equipment.

Mr. Malete said generally people are not aware of the hazards their equipment pose.

He said that legislative gaps in the management of e-waste need to be closed, the intervention should not seek to be punitive but rather should be designed to encourage producers of e-waste to be responsible.

He noted also that there were no records as to how much e-waste as a company they produce annually and how much impact it had on the environment. These he said need to be addressed in order to effectively deal with e-waste. He said service providers had the responsibility to monitor the level of e-waste they produce in order to effectively deal with it.

He called for regulatory intervention in terms of standards and guidelines that help the industry deal with e-waste. He reiterated that these however should not be punitive. There should also be initiatives to raise consumer awareness on dangers associated with gadgets that they use. .

He called for the adoption of principles contained in the 2008 Durban Declaration on Waste Management. The declaration contains issues such as recycling, cooperation among stakeholders, proper institutional frameworks dealing with waste and awareness.

6.0 E-Waste Recycling in Botswana: Mr. Moneedi Kgweenyane; Managing Director of Networking Services

The workshop also heard from Mr. Moneedi Kgweenyane, from Net-wing Services, a company which recycles e-waste. He focused on the recycling of waste, the environmental impact of waste, effects on human health and the products of recycling e-waste. He said most electronic goods such as television sets, decoders, computers and others can be destined for re-sale, reuse and salvaged. Most of them had been donated to schools but without a backup maintenance. Some were sold to employees by companies. Other equipment that leads to e-waste includes transmission equipment for television stations, mobile stations and others. It was not always clear where the equipment was disposed of when it became obsolete.

He said most of the equipment containing hazardous products poses significant risk to workers and to the environment. In some cases unassuming consumers are exposed to e-waste in the form of cracked mobile phones which leak hazardous chemicals.

Mr Kgweenyane pointed out that most of the waste ended in the scrap industry where it was not properly handled putting people's health at risk. Some end up in landfills where they are burnt and in they produce smoke which contains highly toxic chemicals resulting from incomplete combustion of plastics. Such chemicals known as persistent organic pollutants have a slow but lethal impact on human beings. They affect fertility and even lead to mental retardation.

Mr. Kgweenyane noted that there were no statistics showing how much e-waste Botswana produces annually. But he said the United States discards about 30 million computers annually and in Europe about 100 million mobile phones are disposed of annually. Most of them are exported to Africa in the form of e-waste. About 15 percent is recycled and the rest go to landfills where they are incinerated.

On a different note, Mr Kgweenyane said that while e-waste contains hazardous chemicals, it also contains some valuable material such as copper, gold and other metals than could be re-used.

Pollutants that emanate from electronic waste contaminate water, air and soil. Airborne dioxins result from incineration of e-waste.

Mr. Kgweenyane revealed a shocking picture of the former President of Ukraine who was exposed to toxic chemicals which affected his skin.

He said e-waste could be recycled and be reused to minimize environmental problems, create jobs and reduce greenhouse gas emissions.

Recycling of e-waste was done through many processes such as dismantling, reclaiming of usable components and metals. It could be melted or crushed in order to turn it into basic raw material for reuse. Cables could be stripped to recover copper.

Large sophisticated machinery was employed to efficiently mine e-waste by separating various materials for re-use. Such processes are done in an environment friendly manner which includes regular monitoring of the level of impact on the people and environment.

Examples of recycled e-waste include leaded glass which is used in car batteries, copper used in munitions as well as wheel rims.

Mr. Kgweenyane stressed that in Botswana the government has adopted the Basel Convention in the Waste Management Act which classifies e-waste as hazardous waste. Section 51 of the Act speaks of duty of care. This obliges anybody who produces, carries, keeps, and distributes any form of hazardous waste to ensure that it does not escape from their control. This means that anybody who owns hazardous waste is liable for any damage that it may cause. This therefore obliges owners of hazardous waste to always insist on disposal certificates from recyclers who take their waste.

7.0 E waste and its challenges: Mrs. Tebogo Mangadi Deputy Director, Compliance and Monitoring

The final presentation by the Deputy Director, Compliance and Monitoring Mrs. Tebogo Ruth Mangadi addressed the challenges of e-waste. Among the challenges was the lack of formal definition of e-waste which she said created loopholes which could be used to defeat the purposes of effective management of e-waste. Presently it is estimated that 140 million tons of waste is produced annually worldwide. E-waste was said to be the fastest growing and most toxic form of waste globally despite the fact that it was the newest form of waste. She said it was also clear that developing countries were producing e-waste faster than developed countries with the estimation that the volume of obsolete computers generated in the developing countries will exceed that of developed regions by 2016/2018. But the irony was that developing countries were merely consumers and not the manufactures of equipment that resulted in e-waste.

Statistics indicate that by 2013, obsolete computers in developing countries were estimated to reach 400 to 700 million units compared to between 200 and 300 million in developed regions. With mobile phones, 23 phones per second were produced in 2006. Sales of mobile phones reached 515 million units and 665 million units in 2004. Mobile phone subscribers stood at 1.9 billion in 2005 and 2.6 billion in 2009. In terms of lifespan, the mobile phones gadgets are becoming obsolete faster with the lifespan of a phone being six months to a year in 2005.

The major causes of e-waste are technology advances which speed up obsolescence. The PC lifespan has also fallen from six years to two years or less. Other technologies such as television sets have shortened life spans as well In addition the introduction of digital transmission has exacerbated the problem. Trends in fashion, the increase in the purchasing power and the inability to upgrade equipment are some of the contributory factors responsible for the increase in e-waste.

Mrs. Mangadi also reiterated the dangers of the hazardous chemicals found in e-waste. She noted that lead for example can cause severe stomach aches and can lead to physical growth retardation. Mercury can cause brain and kidney damage. Cadmium on the other hand can cause kidney, liver, bone and blood damage. It can penetrate the soil and be absorbed by vegetables and root crops. Brominated flame retardants on the other hand can lead to hormonal damage to the point of changing the DNA leading to deformed offspring.

Mrs. Mangadi cited countries such as India which is one of the largest importers of e-waste mainly from the United States, the United Kingdom and Japan. In 2003, India had 14.1 million mobile phone subscribers which was a growth of more than 100 percent from the 2002 figure. The fixed line subscription also doubled as well as internet penetration. The increase of e-waste in India has subsequently resulted in

the increase in the number of cases of people with ten times the expected levels of lead in their blood. Water samples have also revealed that the presence of lead in water has risen to 190 times higher than World Health Organization acceptable standards in some cases. This is because in many cases schools are situated near dumping sides which have substantial amounts of toxic waste.

Mrs. Mangadi also spoke of the village of Agbogbloshie in Ghana which has been nick named the digital graveyard. It has become a desolate place with no vegetation and with no fish in the river due to e-waste. The place was said to have been a lush habitat with fresh water and flowing rivers only eleven years ago. The water has become concentrated sludge. Ghana as a result has been considered one of the world's e-waste dumps rated among China, India and Vietnam. Agbogbloshie is now considered the most toxic place on earth surpassing Chernobyl in Ukraine which was part of Russia.

The contamination of Agbogbloshie was as a result of the importation of tons of used computers into Ghana from Europe every month with the country's capital Accra receiving 600 and 1600 containers of used computers into Accra harbour every month. Initially it was meant to bridge the digital divide by selling second hand computers. Many of the containers however contained obsolete and damaged computers labelled as second hand computers which once they had landed could not be taken back.

With regard to Botswana, Mrs. Mangadi said Botswana is only a consuming country. She indicated that the country demographics show that 33 percent of the population is between 0 to 14 years which means there is a substantial number of people who are growing into the digital age with the result of future increase in e-waste.

Concerning the challenges, Mrs. Mangadi noted that there are no specific policies or structures that are meant to manage e-waste in Botswana. There is no national data base on the amount of e-waste generated. It is therefore necessary to develop a clear cut definition of e-waste which would enable the development of a database. Currently the national statics do not capture the amount of used equipment in the country and how much of them are waste. In addition there is no formal recycling and recovery infrastructure. There is little or no technical capacity to dismantle and retrieve usable components. There is also lack of knowledge and market for e-waste compared to other types of waste. In addition policy decision by government of replacing electronic equipment after every three years regardless of whether or not they are working exacerbates the problem. Due to lack of manufacturing some of the imported products enter the country already as grey products which increase the amount of e-waste. In addition consumers often dump their equipment at repair shops and simply go and buy other devices elsewhere.

8.0 Discussions

During discussions it was noted that awareness creation is not enough when dealing with issues of public concern. It was therefore suggested that strategies that seek to effect behavioural change should go beyond just making people aware of the problem but enable attitudinal change on environmental issues. There was also concern about the limited funding that goes to environmental education. Participants called for an environmental fund that will enable efficient mobilization of resources towards environmental preservation. There was also a call for a mechanism to monitor the success of the intervention geared towards waste management.

There was a call for centralized collection areas where consumers can deposit their obsolete equipment. In addition participants called for tighter control of what comes into the country to avoid receiving already grey products.

It was also noted that in Botswana eighty percent of the e-waste that is collected formerly by the private environmental services companies comes from institutions both public and private and very little from households. It was stressed that evidence has shown that in most cases the custodians of the equipment which produce e-waste in institutions are the IT department or procurement which do not address matters of safety, health and environment. A proposal was therefore made that such equipment should be the responsibility of departments that deal with safety health and environment because they would ensure that it is properly disposed of. It was also suggested that an environmental levy be introduced paid at source to enable the return of equipment for safe disposal.

There was also a call for a nationwide strategy plan and research on how to deal with e-waste. There also needs to be an appropriate legislation that would guide the disposal of equipment that produce e-waste especially since they are considered as assets.

There was concern that the enforcement of the environmental protection law was inadequate especially with regard to duty of care. In addition there was concern that institutions which produce e-waste have not built enough institutional capacity to effectively manage e-waste. Regulatory institutions such as BOCRA were called upon to ensure that their regulated institutions comply with the Environmental Control and Pollution Act.

Participants also recognized the potential for economic diversification and skills development presented by e-waste. Participants however called for caution in licensing companies that deal with e-waste and that proper screening should be done in order to ensure that only competent companies are licensed.

Concern was raised at the absence of financial and academic institutions at the workshop despite the fact that they are major producers of e-waste. There was therefore a call for engagement of such institutions in discussions around e-waste.

Manufactures of equipment were also challenged to be more responsible for the safe disposal of such equipment as they are better informed about the components in the equipment. There was a call for regulation of prices in the e-waste sector to avoid profiteering. In addition participants called for the message of e-waste to be spread in schools because the young people are the most vulnerable.

There was a call for green computing initiatives and sustainability issues in terms of usage.

There was an appeal to the DWMPC to help the Department of Broadcasting Services to dispose of its obsolete transmission equipment.

Participants called for more workshops on e-waste countrywide to sensitize the nation.

From the Gaborone City Council concern was raised that household waste collected by the council is not separated at source and includes e-waste. There was also a call for stricter control of gadgets that are imported into Botswana to avoid inferior quality gadgets that lead to rapid accumulation of e-waste.

A question was raised with regard to appropriate guidelines that enable the licensing of companies which deal in hazardous waste. The response was that the Basel Convention on transportation of hazardous waste provides clear guidelines as to which companies can be eligible to transport hazardous waste.

9.0 Conclusion

As a way forward, the workshop identified some roles that the different stakeholders could play in managing e-waste. Three main stakeholders were identified as the government, the communications industry and the consumers.

9.1 The Role of Government;

As the signatory to the Basel Convention and well as the custodian of waste management in Botswana through the Department of Waste Management and Pollution Control as established by the Waste Management Act of 1998, government is expectd to play a lead role in e-waste management by:

- Reviewing the present Act to be in tune with the present day waste streams

- Develop Policy and Legislation on e-waste management
- Drive Research and development on e-waste to amongst other things determine e-waste generators, and to establish country e-waste inventory.
- Develop regulations against e-waste dumping
- Encourage public-private partnerships in e-waste management
- Regulate recycling
- Government to introduce environmental levy to fund environmental protection.
- Government is ultimately responsible for enforcement through mandatory regulations that serve the purpose of controlling and monitoring, setting goals, and establishing enforcement rules.

The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal, which came into force in 1992, is the most comprehensive global environmental agreement on hazardous and other wastes and as a country, Botswana should translate the Basel Convention provisions into national legislation.

9.2 The Role of the Industry

The communications industry stakeholders have a critical role to play in managing e-waste and this include but is not exclusive to:

- Keeping inventory of equipment at their disposal
- Adopting green packaging and minimization techniques to ensure that appropriate information is provided about the components of an equipment
- Training and Information dissemination including creating awareness and education on e-waste and building capacity on e-waste management
- Proper recycling and disposal of e-waste; i.e. cleaning of equipment to make sure that identity and other personal information is protected
- Establish take back schemes

While we are aware that Nokia is involved in take-back schemes in the European Union, Australia, parts of Latin America and Asia, we do not see this offer extended to other regions especially Africa and it should be the responsibility of the industry to demand this scheme. For example, in 2006 around 500 Nokia Care Points in China started to collect used phones, with China Mobile offering prepaid cards as an incentive to recycle. The scheme collected over 80 tonnes of electrical materials and

has now been extended to cover 11 Nokia suppliers in China. This would be a good initiative from those who supply and or are retailors of this model of equipment.

Similarly, Samsung Electronics has voluntary take-back programmes for its products at the end of their working lives in North America, Europe and Asia. This responsibility includes ensuring that all collected products are recycled in the most efficient way to minimize the volume of unrecoverable materials and maximize the usable materials. The industry players should demand the same service in order to curb the problem of e-waste.

9.3 The Role of Consumers

- Consumers are expected to be vigilant when making purchases of electronic equipment by buying equipment that has longer life span and asking for take back possibilities.
- They should purchase equipment that is energy efficient and has green packaging
- Consumers should, when purchasing new gadgets enquire about disposal methods and reduce waste by extending the life span of the equipment.
- Consumers should demand the provision of " take back schemes"

9.4 The Role for ICT Regulator (BOCRA)

BOCRA is charged with promoting the use of ICTs. To this end it becomes critical that the regulator becomes an actor in articulating policies and strategies for dealing with concerns arising from the end-of-life period of ICT gadgets and devices. It is the responsibility of BOCRA to continue to create awareness to the industry players and the general public on issues related to electronic waste. Similarly, BOCRA should heighten its advisory role to government and other stakeholders on issues of e-waste.

The advisory capacity though should be alive to the fact that ewaste is within the scope of environmental protection and cross-border trade, as well as ICT and therefore it is essential that there is good collaboration among the different ministries or government departments dealing with ICT and with the environment to ensure that ewaste has visibility on the political agenda, and that all actors work towards compliance with ewaste governance requirements.

The knowledge and expertise of ICT regulators could play a key role in shaping and driving the dialogue on ewaste. The ICT regulator would also be able to ensure a responsible balance between the push for ICT access and the disposal of end-of-life ICT components and gadgets.

10.0 List of Participating Stakeholders

Name	Surname	Organisation	Email	Tel
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