Committee: Special Conference on Decent Work & Economic Growth (SPECON)

Issue: Measures to convert e-waste to a source of decent work

Student Officer: Konstantia Rammou

Position: Deputy President

PERSONAL INTRODUCTION

Dear Delegates of the Special Conference on Decent Work & Economic Growth,

My name is Rammou Konstantia, and it is my honor to be serving as the Deputy President of the Special Conference on Decent Work & Economic Growth committee in this year's ACGMUN. I am currently attending the 10th grade at the German School of Athens (DSA). My first MUN experience dates back to 2019 and since then I have served as a delegate, student officer, judge, and advocate in several conferences.

Furthermore, I enjoy participating in MUN conferences because each one is a new experience for me. Through each conference, I gain a better understanding of current events around the world. I strongly believe that MUN provides excellent opportunities especially for young people, as they can participate in conferences and make lasting memories while cultivating their political interest.

As the Student Officer Team of the Special Conference on Decent Work & Economic Growth, we will do everything we can to create a welcoming environment conducive to productive debate. We are all excited to collaborate with you on long-term solutions that will make the world a more equal place for everyone.

This study guide serves the purpose of introducing you to the last topic of SPECON's agenda. However, I highly encourage you all to make thorough research on your topics and your country's position. At the end of the study guide, in the bibliography section, you can find some links, which can be proven helpful for your research. This is admittedly a lot of work, but I can guarantee you that this year's conference will be a wonderful experience. Should you have any kind of question, procedural or topic-related, do not hesitate to contact me at: konstantia.rammou2006@gmail.com

I am looking forward to seeing you all during the conference!

Yours truly,

Rammou Konstantia

TOPIC INTRODUCTION

Electrical and electronic equipment (EEE) has become a necessity in modern society. Because of its widespread availability and use, it has enabled a substantial portion of the world's population to enjoy higher living standards. The amount of electrical and electronic waste (e-waste) has increased at an alarming rate, during the last few years around the world, due to the increased use of electrical and electronic equipment (EEE).

Figure 1: Image depicting the Global E-waste Monitor 2017.

"According to the International Communications Union, the amount of e-waste generated in 2016 was enough to build almost 4,500 Eiffel towers: by weight, it totaled 44.7 million metric tons of old computers, televisions, fridges, cell phones, and other appliances."[1]

Due to the fact that effective reprocessing technology, which recovers valuable materials with minimal environmental impact, is expensive, the majority of e-waste is disposed of in landfills. Countries with high e-waste production, on the other hand, transport the waste illegally overseas rather than developing new recycling techniques. As a result, only about one-sixth of e-waste is recycled properly.

One possible solution for dealing with this problem is raising public awareness about the environmental harm caused by techno trash, as well as taking advantage of it; this action will have the side effect of increasing the number of devices recycled. Everything mentioned above is predicated on the existence of a good electronic and electric device recycling system.

[1] "Scaling Up UNIDO's E-waste Management Cooperation." UNIDO | United Nations Industrial Development Organization, www.unido.org/stories/scaling-unidos-e-waste-management-cooperation.

DEFINITION OF KEY TERMS

Brown goods

Brown goods include televisions, radios, computers, DVD players, lights, and other electronic appliances.

Decent work

"Decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men."[2]

Electrical and Electronic Equipment (EEE)

Devices that rely on electromagnetic fields or electric currents to function properly are classified as electrical and electronic equipment. EEE also includes equipment for producing, transferring, and measuring such currents and fields, as well as any piece of equipment that has a battery or requires a power supply to function properly.

E-waste

Electronic waste refers to broken, obsolete, or no longer wanted electronic devices, the parts of which can be recycled to make a new device. Hazardous materials (such as beryllium, cadmium, mercury, and lead) are found in e-waste, as well as precious metals such as gold, silver, copper, platinum, and palladium.

Grey goods

Grey goods are products that are imported from another country and sold at a much lower price than the manufacturer originally intended. They also lack a brand. This means they will have no support and a warranty they have never heard of.

Recycling

"The process of collecting and changing old paper, glass, plastic, etc. so that it can be used again."[3]

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[2] "Decent Work." International Labour Organization, www.ilo.org/global/topics/decent-work/lang--en/index.htm

[3] *Recycling*. (n.d.). Cambridge Dictionary | English Dictionary, Translations & Thesaurus, https://dictionary.cambridge.org/dictionary/english/recycling

White goods

Domestic appliances such as heaters, washing machines, refrigerators, and dryers are classified as white goods. They are typically white in color, though this can vary.

BACKGROUND INFORMATION

The beginning of e-waste

The first incident of e-waste dumping occurred in the 1980s, when a Liberian ship was dispatched to Philadelphia to collect and dispose of 14,000 tons of e-waste ash. This ash was supposed to go to New Jersey, but it was turned down by that state. Rather than find another way to properly dispose of the e-waste, the Liberian ship set sail and dumped the entire 14,000 tons of e-waste into the ocean, which stretched from the Caribbean to Asia. Following that, another incident occurred in Nigeria. In 1988, approximately 3,500 tons of toxic waste from Italy was illegally dumped in the small town of Koko.

Following those events, it has been illegal to dump e-waste in the United States since 1976 when the Resource Conservation and Recovery Act (RCRA) was passed. It has also been illegal to dump e-waste in LEDCs since the Basel Convention in 1989. Since it became illegal to dump e-waste in many parts of the world, a new solution to properly dispose of electronic waste had to be developed. As a result, the practice of legally and safely recycling used electronic equipment has emerged.

Transportation of e-waste

Since the mid-1990s, it has been illegal to export or import techno trash or any other type of waste, but a substantial number of MEDCs are exporting e-waste to LEDCs due to the fact that they either lack the necessary facilities to deal with waste or do not want techno trash buried beneath the surface due to serious environmental concerns. Illegal shipments of plastic waste are likely to put the environment under a lot of stress. Plastic waste may be exported to non-EU countries for disposal, and hazardous plastic waste may be exported to countries that are not members of the Organization for Economic Co-operation and Development (OECD) for recovery, both in violation of the Waste Specification Record (WSR). It is worth noting that plastics can be contaminated because they are frequently mixed with hazardous waste to hide illegal shipments of the latter. Finally, plastic waste may be illegally exported for recovery to non-OECD countries that have banned its import, deeming such transportation in violation of the importing country's control procedure.

Impact of e-waste

On health

The negative effects of the toxins found in e-waste are not limited to workers; they can also harm human health in general. Humans can be exposed through ingestion, inhalation, or contact with the skin. Damage to the nervous and blood systems, negative effects on the kidneys and brain

Materials	Effect on human health
Antimony	Severe skin problems.
Cadmium	Damage to kidney and bone structure, elevated blood pressure. Cadmium is a carcinogen.
Lead	Short-term exposure can initially cause malaise, muscle pain and headache. Long-term exposure can lead to irreversible damage to the nervous system, particularly in children.
Mercury	Short-term exposure can initially cause lung damage, nausea, diarrhoea, skin rashes, and high blood pressure. Long-term exposure damages the central nervous system and kidneys.
Nonylphenol	Damages sperm function and deoxyribonucleic acid (DNA).
Polybrominated diphenyl ether	Affects immune system, interferes with growth hormones, sexual development and brain development. Children who are exposed display increased risk of thyroid disease and neurobehavioural disease.
Polychlorinated biphenyls	Suppresses immune system, damages the liver and nervous system, promotes cancer, causes behavioural changes, and damages male and female reproductive systems.
Polychlorinated naphthalene	Can impact skin, the liver, the nervous and reproductive systems.
Triphenyl phosphate	Contact dermatitis, endocrine disruptor.

Source: Kumar, Holuszko and Espinosa, 2017; Grant et al., 2013

Figure 2: Table depicting the toxic substances found in e-waste, as well as the negative health effects they can have.

development, respiratory disorders, skin disorders, bronchitis, lung cancer, and heart, liver, or spleen damage are just a few of the gravest consequences for human health. Some of the hazardous chemicals found in e-waste have been linked to the development of cancer in humans. Because their intake of air, water, and food is significantly higher in proportion to their weight than adults, children who work in the sector or live near e-waste operation sites are particularly vulnerable to hazardous chemical absorption. Toxic exposure stunts the development of children's central nervous systems, immune systems, reproductive systems, and digestive systems. E-waste can harm citizens who live in cities near recycling facilities, in addition to those who work in the e-waste value chain. In a study comparing the environmental and health effects of e-waste in China and Nigeria, researchers discovered significant DNA damage in populations exposed to e-waste processing.

On the environment

Electronic waste is toxic, non-biodegradable, and accumulates in the environment, including soil, air, water, and living things. Toxic materials are released into the environment when open-air burning and acid baths are used to recover valuable materials from electronic components. The methods used in India's informal e-waste sector to manage and recycle e-waste have a significant environmental impact. E-waste burning contributes to air pollution, which has become a major issue in India's rapidly growing cities.

Heavy metals in e-waste (such as lead, barium, mercury, or lithium) can contaminate groundwater, streams, and ponds, which are the primary sources of water for many local communities.

Table 2. Pollutants in various types of EEE

EEE	Pollutant
Computers	Lead, mercury, cadmium and beryllium
Batteries (disposable, rechargeable, and lithium)	Cadmium, cobalt, lead, lithium, mercury, nickel, silver and zinc
Mobile phones	Lithium, copper, tin, cobalt, indium, antimony, silver, gold, and palladium
Photocopiers	Mercury, selenium
Circuit boards	Silver, lead, copper, cadmium, brominated flame proofing agent, polychlorinated biphenyls and arsenic
LED (light emitting diodes)	Arsenic
CRT (cathode ray tubes)	Cadmium, lead
LCD (liquid crystal displays)	Mercury

Figure 3: Table depicting the pollutants in several types of EEE.

Furthermore, e-waste chemicals are non-biodegradable and can contaminate soil, posing a risk to grazing livestock. Because most of the chemicals in question have a slow metabolism in animals, they tend to build up in tissue and end up in foods like eggs and milk.

The potential of e-waste in a circular economy

EEE is extremely difficult to design from a material standpoint. EEE contains up to 69 elements from the periodic table, including precious metals (such as gold, silver, copper, platinum, palladium, ruthenium, rhodium, iridium, and osmium), Critical Raw Materials (CRM) (7) (such as cobalt, palladium, indium, germanium, bismuth, and antimony), and noncritical metals like aluminum and iron.

The mine of e-waste should be considered an important source of secondary raw materials in the circular economy paradigm. Because of issues such as primary mining, market price fluctuations, material scarcity, availability, and resource access, it has become necessary to improve secondary resource mining and reduce the demand for virgin materials.

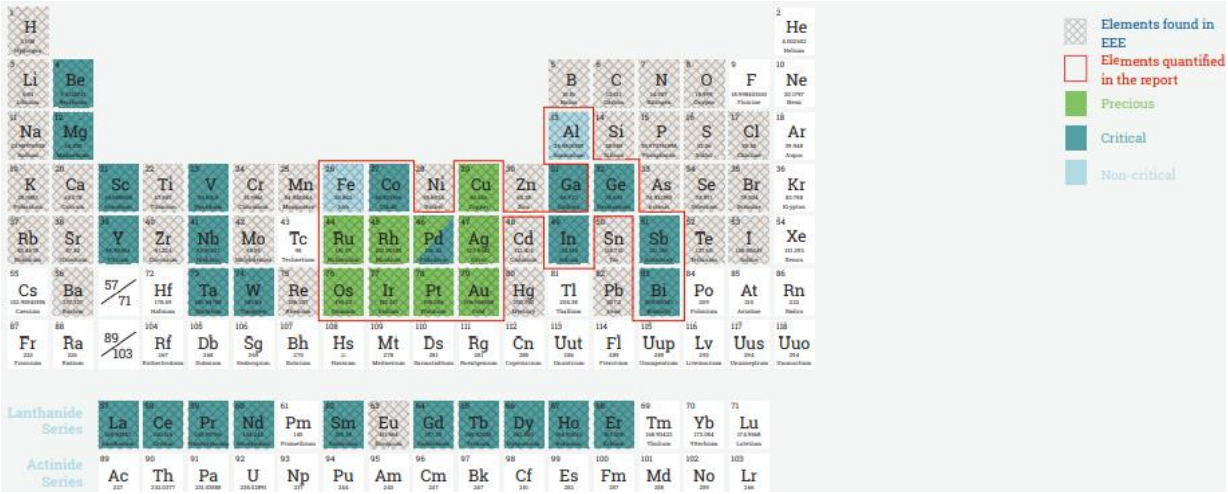

Figure 4: Image depicting the 69 elements from the periodic table that can be found in EEE.

The e-waste recycling process

The collection of electronic products through recycling bins, collection locations, take-back program, or on-demand collection services is the first step in the e-waste recycling process. After that, the mixed e-waste is sent to specialized electronic recyclers. At this stage of process, best practice dictates that e-waste be separated by type, which is why many collection sites will have different bins or boxes for different items. This is especially important for e-waste containing batteries, which require special handling and can cause severe damage if mixed with other waste.

The next step of the e-waste recycling process is the storage. While secure storage may not appear to be a priority, it can be extremely beneficial. E-waste then goes through a manual sorting stage, in which various items (such as batteries and bulbs) are removed for further processing. Some items may also be manually dismantled

for components, reuse, or the recovery of valuable materials at this stage. E-waste is then shredded into small pieces, which allows for accurate material sorting. Most electronics are made up of a variety of materials and breaking them down into pieces as small as a few centimeters enables them to be mechanically separated.

Afterwards, the following step, which is the mechanical separation of various materials, is made up of several processes that are conducted one after the other. Magnetic separation and water separation are the two most important steps.

Magnetic separation

The shredded e-waste is fed through a massive magnet, which separates ferrous metals like iron and steel from the rest of the waste. Furthermore, an eddy current can be used to separate the nonferrous metals. These materials can then be diverted to smelting plants that specialize in recycling. At this point, other materials such as metal-embedded plastic and circuit boards are separated.

Water separation

Water is used to separate the materials in a solid waste stream that now consists primarily of plastic and glass, further purifying for the separation of different plastics as well as hand-sorting obvious contaminants.

At the end, the materials are separated and ready to be sold or reused. For some materials, such as plastic or steel, this entails transferring to a different recycling stream. Others may be processed on-site and sold alongside usable components that have been separated early on.

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

Ghana

Agbogbloshie, a Ghanaian district near Accra, is the home to the world's largest e-waste dumpsite. Illegally, containers labeled "Development Aid," or "Second-Hand Products" arrive in Tema Harbour, 20 miles east of Agbogbloshie. Customers all over the world expect their electronic waste to be properly recycled, but illegal dumping has become a lucrative business. Young people aged 7 to 25 smash e-wastes with whatever tools are available to "extract" precious metals.

United States of America (USA)

Among all countries, the United States produces the most e-waste each year. According to the United States Environmental Protection Agency (EPA), nearly 6.3

kilotons of e-waste are discarded each year, with only 12.5 percent being properly recycled. According to National Geographic, this is the equivalent of every American family throwing away 400 phones in a year. Although there is no official federal e-waste regulation system, some state-level regulations have been implemented. The Environmental Protection Agency (EPA), the Council on Environmental Quality, and the General Services Administration (GSA) co-founded the National Strategy for Electronic Stewardship, which was released in 2011 to focus on federal action to establish electronic stewardship in the United States.

United Kingdom (UK)

To ensure that the Basel Convention agreement was not violated, the Basel Action Network (BAN) conducted an investigation. Researchers were able to track three suspicious exports that originated from UK Council recycling facilities and were shipped to Nigeria, Tanzania, and Pakistan as a result of this investigation.

China

E-waste is a serious environmental issue for China, as it is the largest importer of electronic waste. Furthermore, China is home to the world's largest e-waste dump, the Guiyu Electronic Waste Site. This dumpsite, in particular, is 52 kilometers long and poses a health risk to many residents. Nearly 80% of the children who live in or near this area have been exposed to lead. The Chinese government has made numerous efforts to implement the e-waste import ban, and the situation in Guiyu has improved slightly since 2007, but it remains a major issue for the locals. Last year, the country was able to ban the import of all plastic waste in order to clean up its environment.

Malaysia

Following China's ban on plastic waste imports, countries that shipped their waste there began looking for new destinations, including Malaysia. According to a recent Greenpeace report, plastic waste, including e-waste exported from the United States to Malaysia, was more than double in the first months of 2018 compared to the previous year.

United Nations Economic Commission for Europe (UNECE)

UNECE runs the Secretariat of the Task Force on Waste Statistics, which was established under the auspices of the Conference of European Statisticians, since February 2016. The Task Force's main goal is to create a conceptual framework for waste statistics that will serve as the foundation for the systematic production of waste statistics in the future, as well as to assist in the resolution of the most significant conceptual issues that currently exist in waste data collection. This

framework will also lay the groundwork for incorporating important emerging issues like e-waste into official statistics.

TIMELINE OF EVENTS

Date	Description of event
1970	Many developed countries began to approve regulations that managed the treatment of hazardous waste and chemical use in the environment
1976	The Resource Conservation and Recovery Act (RCRA) was passed
1980	A Liberian ship was dispatched to Philadelphia to collect and dispose of 14,000 tons of e-waste ash
1980	US and European companies began to apply for UWEPA approval
1986	The Resource Conservation and Recovery Act (RCRA) was passed
1988	The U.N. General Assembly adopted resolution 43/212
1988	Approximately 3,500 tons of toxic waste from Italy were illegally dumped in the small town of Koko
22 March 1989	The Basel Convention was opened for signature
5 May 1989	The Basel Convention entered into force
1998	The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade was signed
17 May 2004	The Stockholm Convention entered into force
November 2006	184 states and the European Union were parties to the Basel Convention
March 2007	The initiative Solving the E-waste Problem (StEP) was officially launched

RELEVANT UN RESOLUTIONS, TREATIES AND EVENTS

The Rotterdam Convention

The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, which was signed in 1998 and revised in 2017, is another convention relevant to the management of e-waste The Rotterdam Convention encourages countries exporting and importing hazardous chemicals to share responsibility.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was adopted by the Conference of Plenipotentiaries in Basel, Switzerland, on March 22, 1989, in response to a public outcry following the discovery of toxic waste deposits imported from abroad in Africa and other parts of the developing world in the 1980s**.** The Convention's provisions focus on reducing hazardous waste generation and promoting environmentally sound waste management, regardless of disposal location, the restriction of hazardous waste transboundary movements except where it is perceived to be in accordance with the principles of environmentally sound waste management, and a regulatory system that applies to cases where transboundary movements are permissible.

The Stockholm Convention

The Stockholm Convention is a global treaty aimed at protecting human health and the environment from chemicals that persist in it for extended periods of time, spread geographically, accumulate in the fatty tissues of humans and wildlife, and have harmful effects on human health or the environment.

Resolution 43/212

The United Nations General Assembly adopted resolution 43/212 on December 20, 1988, which, among other things, urged all States to take the necessary legal and technical measures to halt and prevent the illegal international trafficking, as well as the dumping and resulting accumulation of toxic and dangerous products and wastes.

SDG Target 12.4

The Sustainable Development Goal target 12.4 aims to: “By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly

reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment"[4]

Open dumping or the use of other chemical processes such as acid baths and amalgamation to separate valuable materials in e-waste are currently the most common e-waste management practices in developing economies.

There is little attention paid to eco-design during the production of EEE, implying a lack of lifecycle thinking. As a result, much EEE still contains hazardous chemicals like mercury or lead, which reduce product durability. There are nonhazardous substitutes (alternatives) for some of these chemicals. However, this does not apply to all chemicals at this time.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

Solving the E-waste Problem (StEP)

In March 2007, the initiative Solving the E-waste Problem (StEP) was officially launched. It was created when the amount of waste electrical and electronic equipment (WEEE) began to rise dramatically, and the problem was becoming more widely recognized. It is an international initiative with the goal of developing solutions to problems related to WEEE. Government agencies, NGOs, prominent players in the fields of production, reuse, and recycling of electrical and electronic equipment (EEE), as well as UN organizations, are among its members. This initiative promotes collaboration among all e-waste stakeholders, emphasizing a holistic, scientific, yet practical approach to the problem.

Clean E-India initiative

The International Finance Corporation (IFC) and Attero launched the Clean E-India initiative in 2011, a take-back program aimed at creating a sustainable market for e-waste management and responsible recycling practices by engaging directly with manufacturers, informal collectors, and dismantlers (providing them with training and appropriate working gear), and other key players in the sector. The International Labor Organization (ILO) and the IFC collaborated on the creation of an action manual to improve the safety and health of e-waste workers.

[4] *UN Environment Management Group – The UN Working Together for the Environment*, https://unemg.org/images/emgdocs/ewaste/E-waste%20Synthesis%20Report%20-%20unedited%20version.pdf

The GREEN initiative

The GREEN initiative, which "seeks to support the effective implementation of the E-waste (Management) Rules by implementing large-scale awareness-raising activities among different stakeholders regarding the adverse impacts on the environment and health caused by improper disposal of e-waste," is part of the Awareness Programme on Environmental Hazards of Electronic Waste. The program has held workshops for schools, bulk consumers, informal sector representatives, and dealers, among others, and has also developed a curriculum for schools and stakeholder training materials focused on e-waste recycling best practices.

POSSIBLE SOLUTIONS

Capacity strengthening

Any future investment in e-waste systems should include capacity strengthening as a key component. This includes strengthening the capacities of the various branches of the government involved in ensuring decent work in e-waste management; improving coordination between key ministries and agencies at the federal, state, and municipal levels; strengthening labor and environmental inspection capacities; and strengthening trade unions' and employer organizations' capacity to provide services, including more effective organization and coordination.

Assisting e-waste actors in capturing the value of e-waste materials

Given the ILO's normative approach and unique tripartite structure, the Organization and its constituents can help advance decent work in e-waste management by assisting e-waste actors in capturing the value of e-waste materials and increasing the sector's productivity. Involving governments, employers' and workers' organizations in the formulation and revision of laws, regulations, and policies, as well as ensuring that they are effectively coordinated and implemented in practice, requires social dialogue in all of its forms.

Legislation

Moreover, new developing, revising, implementing, and enforcing labor laws and regulations need to be made to ensure that the fundamental principles and rights at work, as well as the international labor conventions that member states have ratified, are protected, and applied to all workers involved in e-waste management or the already existing ones need to be modified.

Buy-back and return methods

Consumers can also use buy-back and return methods for used electronics, in which they can return their old or broken devices to the company and receive money in exchange. Every electronic device contains valuable metals that could be recycled to make new ones. Companies can reduce their environmental impact while also lowering production costs in this manner.

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