Forum: Legal Committee (GA6)

Issue: Establishing a legal framework for the management of electronic waste

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Position: Co-Chair

Personal Introduction

Dear delegates,

My name is Spiros Glykos, and it is my pleasure to welcome you to the General Assembly Legal/Sixth Committee of the 8th session of ACGMUN, where we will be placing emphasis on the theme "Balancing Infinite OpportunitieΣ (BIOΣ)". I am an 11th-year student at HAEF Psychiko College, and I have received the great honour of serving as one of the Co-Chairs of this committee. This is my 6th conference that I am taking part in, and my first time as a Student Officer, so I am sincerely excited to meet you all and form an amazing experience for all of you in this committee especially if it is your first time in an MUN conference.

In this study guide, I will be analyzing the reasons that have caused electronic waste to exist and the consequences that are evident throughout the world. I will also be defining some important terms that play an undisputed role in the topic of this study guide and providing important information that will help you with your research. There will also be mentions of other attempts to establish legal frameworks to limit the effects of electronic waste, and whatever success they had. I hope that I will provide adequate information through this study guide, and I wish you all good luck with your preparation. For more information you can contact me through my email: spiglykos@gmail.com

Topic Introduction

As it is evident, the key phrase of this topic is electronic waste. But what is that? Electronic waste or e-waste is defined as discarded electronic gadgets and equipment that are no longer in use, damaged or have become outdated. Those products are usually unwanted, not working and nearing the end of their useful life, leading to them being discarded and thrown away. Examples of such products include computers, televisions, VCRs, stereos, copiers, and fax machines are everyday electronic products. The discarded products generate around 40 million tons of electronic waste, which accounts for 0.2% of waste generated annually but produces around 4% of GHG emissions. This gap between these two percentages is quite alarming and is an indicator for the necessity of regulating and marginalizing electronic waste. Another problem that stems from e-waste is that only a minute percentage of 12.5 of it is recycled, which definitely does not help with the harmful effects that e-waste has. Lastly, e-waste is considered as part of solid waste, an important factor in how it is handled and processed.

An important aspect that we must take into consideration is the discarding of electronic waste. Unfortunately, e-waste is usually discarded in non-sustainable and unscrupulous ways, such as landfilling, acid baths and incineration, which not only foster appropriate environments for gas emissions, and unhealthy living conditions for the local populations. A notable example is Accra, Ghana, where landfills composed of electronic waste have severely affected the local flora and fauna, and have altered the cityscape of the Ghanaian metropolis. Also, the recycling efforts have not ameliorated the situation nearly at all, as not enough focus is drawn towards the matter.

The main difficulty that recycling companies are facing is the release of a staggering 1000 different chemical substances into the soil, water and air of the place where the recycling takes part, including known neurotoxicants such as lead, which can cause health and developmental issues to pregnant women and children. Another well-known practice, especially in developing countries such as Paraguay, is to disband the devices and extract metals. Aside from the fact that these metals are oftentimes sold in illegal ways, there are no precautions taken to ensure that this practice is safe, leading to one being exposed to harmful elements and facing health risks. But illegal practices do not stop there.

A common situation that takes place is the illegal export of tonnes of electronic devices, shipped under the guise of donations, which are in turn not handled properly and end up in either illegal landfills or as scrap metals, further contributing to soil pollution as well as to corruption. Alas, there exist appropriate alternatives, where we can dismantle and recycle electronic waste, using advanced technology where certified machinery separates the metals and retains precious materials such as gold. This leads to the other elements of the devices being shredded and reused in other devices, eliminating, slowly but steadily, the e-waste that is discarded.

Definition of Key Terms

Electronic Waste

Electrical or electronic equipment that is waste, including all components, subassemblies and consumables that are part of the equipment at the time the equipment becomes waste

Solid Waste

Any material that is discarded by being abandoned, inherently waste-like and/or recycled in certain ways

Hazardous Waste

A waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment

Furans

A highly volatile, colourless substance naturally present in oils of resinous coniferous woods. It is also produced artificially and used in the chemical industry to manufacture resins and varnishes.

Bioaccumulation

An important process through which chemicals can affect living organisms. An increase in the concentration of a chemical in a biological organism over time may occur compared to the chemical's concentration in the environment, leading to bioaccumulation.

Fossil fuels

Any of a class of hydrocarbon-containing materials of biological origin occurring within Earth's crust that can be used as a source of energy. They include coal, petroleum, natural gas, oil shales, bitumens, tar sands, and heavy oils

Carbon sequestration

The process of capturing and storing atmospheric carbon dioxide. It is one method of reducing the amount of carbon dioxide in the atmosphere with the goal of reducing global climate change.

GHG emissions

Gas emissions that stem from human activity trapping infrared radiation from the Earth and keeping the planet warm. This process is known as the greenhouse effect.

Apgar scores

Clinical indicators of a baby's condition shortly after birth, based on 5 characteristics of the infant: skin colour, pulse, breathing, muscle tone and reflex irritability

Background Information

Historical Background

Electronic waste disposal practices have been around since the mid-1970s, coinciding with the creation of well-known devices such as the modern computer and the cellular phone. Actions against e-waste were fast, with the United States of America passing the Resource Conservation and Recovery Act (RCRA) denouncing all e-waste disposal activity in the country and announcing it as illegal. Several incidents led to immediate action against e-waste, with the most publicized event happening in the Caribbean, after a Liberian ship, known as *Khian Sea*, dumped 4,000 tonnes of ash there in August 1986[1]. This incident triggered public revolt and in 1989 the Basel Convention[2] was adopted, which declared dumping e-waste in less developed countries illegal. In 1991 Switzerland

[1] "The Toxic Ship: The Voyage of the Khian Sea and the Global Waste Trade." *Environment & Society Portal*, 21 Aug. 2023, www.environmentandsociety.org/mml/toxic-ship-voyage-khian-sea-and-global-waste-trade.
[2] to, Contributors. "International Treaty to Prevent Transfer of Hazardous Waste from Developed to Less Developed Countries." *Wikisource.org*, Wikimedia Foundation, Inc., 27 Aug. 2008, en.wikisource.org/wiki/Basel_Convention. Accessed 22 Feb. 2025.

became the first country to implement a formal e-waste recycling system[3], with the introduction of a system to collect refrigerators, after outcries by the public. Gradually, other electric and electronic devices got added to the system in later years, foreshadowing the progress that is about to take place. In 1991, the first 14 countries (Argentina, China, El Salvador, Finland, France, Hungary, Mexico, Nigeria, Norway, Panama, Romania, Saudi Arabia, Sweden, Uruguay)[4] ratified the convention in response to concerns about hazardous e-waste being exported to developing countries for cheap, unsustainable disposal options. In 2001, Japan passed the Law for the Promotion of Effective Utilization[5], which encourages manufacturers to help recycle goods. Public response was not absent: Through the Right to Repair movement[6], which called for companies to repair devices instead of immediate disposal, American national Kyle Wiens rose to prominence in 2003 after he created iFixit, a website that empowered consumers to repair their electronics by offering repairs guides, community forums, and repair kits[7]. During the same year, the European Union implemented a similar system to that of Switzerland, under the Waste Electrical and Electronic Equipment Directive (WEEE Directive, 2002/96/EC)[8]. In 2004, the Canadian Province of Alberta launched Canada's first provincial program for e-waste recycling, with the whole country of Canada, diverting a staggering 24,367 metric tonnes of e-waste through numerous diversion programs[9]. In 2006 the United Nations projected that 50 million metric tonnes of electronic waste were disposed of annually worldwide[10]. According to a UNEP report titled "Recycling – from e-waste to Resources"[11], in certain nations, like India, the amount of e-waste created over the next ten years, including computers and mobile phones, might increase by as much as 500%. In 2009, Japan passed another law, the Law for the Recycling of Specified Kinds of Home Appliances (LRHA)[12], which calls for more recycling efforts by both consumers and manufacturers of

[3] Great Lakes Electronics Corporation. "What Is E-Waste? Definition and Why It's Important." *Great Lakes Electronics*, Great Lakes Electronics Corporation, 12 Mar. 2020, www.ewaste1.com/what-is-e-waste/.

[4] "Parties to the Basel Convention." *www.basel.int*, www.basel.int/Countries/StatusofRatifications/PartiesSignatories/tabid/4499/Default.aspx.
[5] *Law for the Promotion of Effective Utilization of Resources*, www.env.go.jp/content/900452886.pdf.
[6] "Advocacy." *The Repair Association*, www.repair.org/stand-up.
[7] iFixit. "Repair Is Noble - IFixit." *Ifixit.com*, iFixit, 28 Nov. 2019, www.ifixit.com/Right-to-Repair.
[8] *DIRECTIVE 2002/96/EC of the EUROPEAN PARLIAMENT and of the COUNCIL of 27 January 2003 on Waste Electrical and Electronic Equipment (WEEE)*.
[9] News, CBC. "Electronics Recycling Fee Begins in Alberta." *Www.cbc.ca*, CBC, 2025, www.cbc.ca/amp/1.534606. Accessed 22 Feb. 2025.
[10] United Nations. "WaSTE maNagEmENT." *WaSTE maNagEmENT*, pp. 26–29. www.un.org/esa/dsd/resources/res_pdfs/publications/trends/trends_Chemicals_mining_transport_waste/ch4_waste_management.pdf.
[11] "(PDF) Recycling - from E-Waste to Resources." *ResearchGate*, www.researchgate.net/publication/278849195_Recycling_-_from_e-waste_to_resources.
[12] *Law for the Recycling of Specified Kinds of Home Appliances (Home Appliance Recycling Law)*.

home appliances. In 2019, a staggering amount of e-waste (53.6 Mt) was produced globally, with an average of 7.3 kg per person. By 2030, this is expected to rise to 74 Mt[13].

Impacts of improper management of electronic waste

Environmental Impacts

Electronic waste typically consists of toxic chemical substances such as lead, mercury, and cadmium. When e-waste is not adequately disposed of, these substances pose an immense threat to the environment as they leech into the soil, undoubtedly contaminating it & making it inhabitable/unsuitable for agricultural purposes. Studies report that approximately 77.7% of e-waste is not handled and/or recycled correctly, leading to the majority of the discarded devices being burned or melted via unethical and non-environmentally friendly techniques[14]. Substances remain in the soil for many years thus consequences will be felt for generations, further impacting domains such as agriculture and housing for a longer period of time. Burning e-waste involves immense levels of energy use. This energy (like most industrial processes) is provided by the burning of fossil fuels thus contributing to the emission of GHGs such as carbon dioxide, methane, nitrous oxide and more, which greatly contribute to climate change and worsen the atmosphere and the PH levels of the air we breathe.

The improper disposal of e-waste directly leads to the contamination of water, heavily impacting ecosystems that play a role in carbon sequestration, such as forests, grasslands wetlands and oceans (phytoplankton absorbs CO2 during photosynthesis, making the ocean a place for pivotal Co2 intake). When such ecosystems are damaged or even slightly disrupted, their capability to absorb and assimilate carbon dioxide diminishes, increasing the concentration of greenhouse gases in the atmosphere. Furthermore, it corrodes those ecosystems, causing local flora and fauna to be eradicated and biodiversity to diminish.

[13]unitar. “GEM 2020.” *E-Waste Monitor*, 2020, ewastemonitor.info/gem-2020/.

[14] Geneva Environment Network. “The Growing Environmental Risks of E-Waste.” *Geneva Environment Network*, 9 Oct. 2024, www.genevaenvironmentnetwork.org/resources/updates/the-growing-environmental-risks-of-e-waste/.

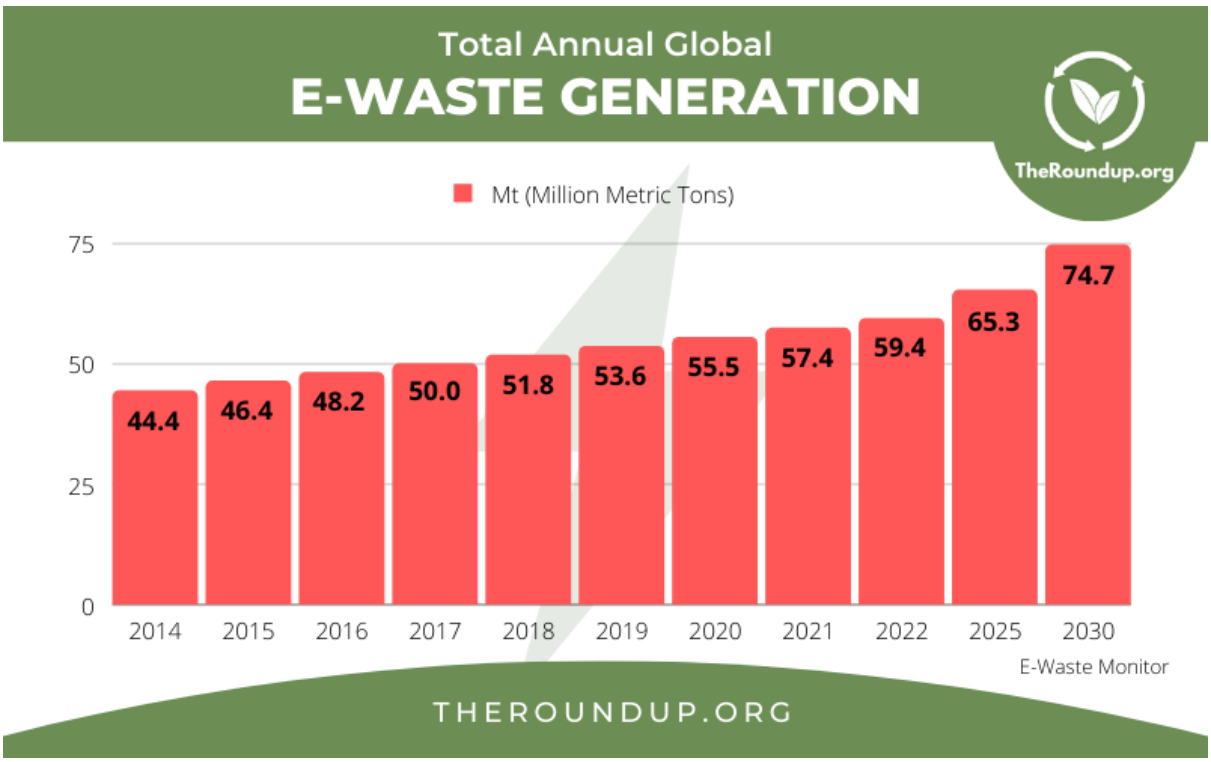

Figure 1 [15]***:*** *Graph denoting the percentage of e-waste generated every year till 2030*

Health Implications

Disposal of e-waste by burning it is illegal and has detrimental consequences for all. Burning electronic waste releases toxic gases and particulate matter such as heavy metals & furans, which are harmful for human consumption. Breathing any combination of those gases leads to a plethora of biological implications such as organ damage, permanent respiratory issues, bioaccumulation (which causes chronic poisoning), carcinogenic effects (increasing the risk of developing cancer) & neurological damage. This is the case for countries mainly located in West Africa, where China, the U.S.A. and Western Europe tend to dump their e-waste. Another health implication of e-waste is heightened cord blood lead concentration, which can provoke problems with blood flow and pressure. This, along with common stillbirths, low birth weights and low Apgar scores,

[15]Ruiz, Arabella. "14 Shocking E-Waste Statistics in 2022 - the Roundup." *Theroundup.org*, 12 Aug. 2021, theroundup.org/global-e-waste-statistics/.

are the repercussions of prenatal exposure, a common phenomenon in West Africa and China, where it was documented in children that their parents worked at e-waste recycling sites. Exposure to e-waste is also to blame for impaired cognitive function in children, causing children to be able to flourish academically. Except for health problems caused by exposure to e-waste, handling of it is also a main factor for injuries and accidents that may cost the worker's rights. Slips, trips and falls are frequent, while the danger of crushing hazards lingers on worksites. Workers may also be subjected to loud noises that oftentimes lead to hearing loss.

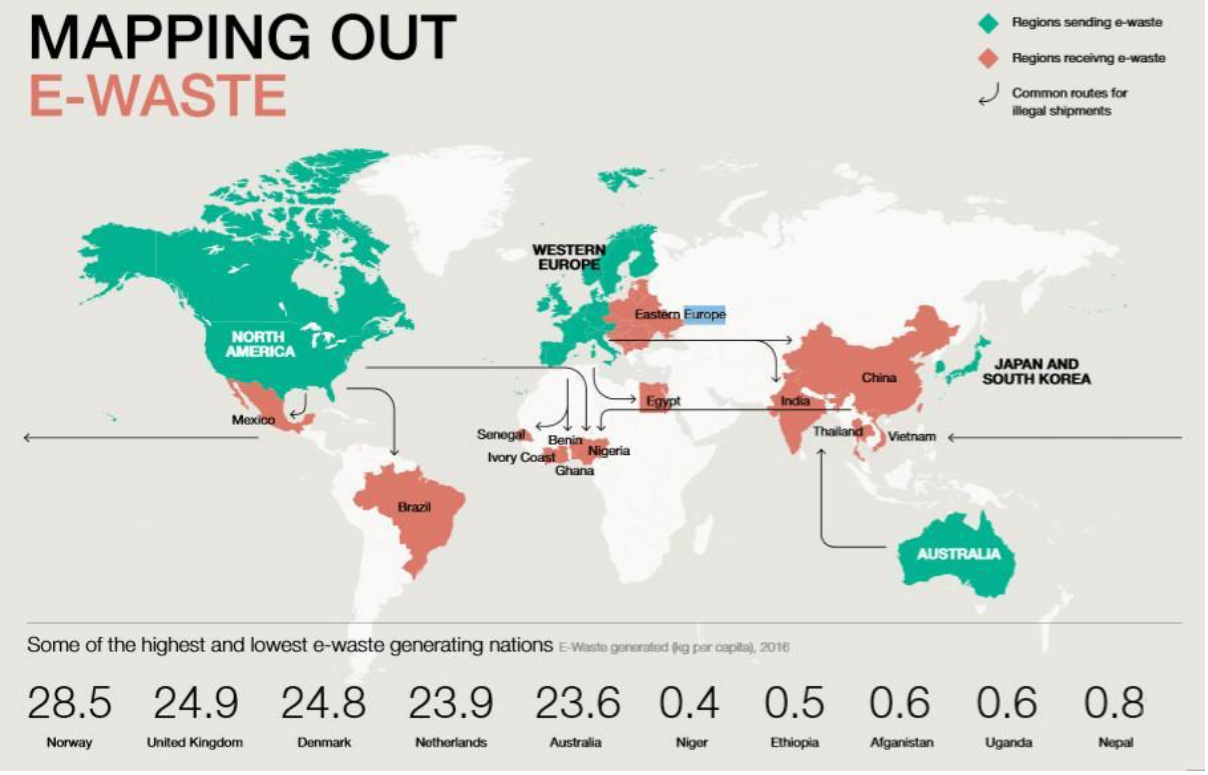

Figure 1 [16]***:*** *Map denoting the countries with the highest and lowest percentages of e-waste*

[16]Geneva Environment Network. "The Growing Environmental Risks of E-Waste." *Geneva Environment Network*, 9 Oct. 2024, www.genevaenvironmentnetwork.org/resources/updates/the-growing-environmental-risks-of-e-waste/.

Major Countries and Organizations Involved

USA

As a nation that has long promoted recycling e-waste, it mostly does so by enforcing federal legislation like the Resource Conservation and Recovery Act (RCRA)[17], which was put into effect in 1976 and was overseen by the Environmental Protection Agency (EPA)[18]. By separating solid trash from hazardous garbage, this act established a legal foundation for waste management. To guarantee that hazardous waste is handled and disposed of appropriately throughout its life cycle, the RCRA requires that hazardous waste be tracked from its point of origin to its ultimate destination. The Obama Administration's National Strategy for Electronic Stewardship, which attempts to promote and advance the sustainable recycling of electronic trash, is another noteworthy initiative. Last but not least, the Responsible Recycling (R2) Standard, which attempts to enforce strict environmental and health standards, is widely accepted in several industries that may contribute to electronic trash, even if it is not a part of the American legal system. For instance, it guarantees that substances like lead and mercury are handled properly to prevent contamination or pollution of the soil or water. Nonetheless, a lack of awareness regarding e-waste issues is also a problem in the U.S., especially among young people. A survey conducted in 2020 among individuals aged between 18 and 38 revealed that 60% were unaware of the term "e-waste", and 57% did not regard electronic waste as "a significant contributor to toxic waste"[19]. Between 50 and 70 per cent of the e-waste that is collected for recycling in the United States is transferred to underdeveloped nations, where it is typically recycled in the unofficial recycling industries of Asia and West Africa[20]. The country that recycles the most e-waste is China, which is followed by Nigeria, Ghana, and India. Along with manual disassembly, burning and disassembling e-waste is the principal occupational practice that exposes workers to hazardous materials and contributes significantly to atmospheric pollution. Workers frequently lack the protective gear needed to protect them from dust and harmful toxins at work, such as face masks and uniforms.

[17] US EPA. “Resource Conservation and Recovery Act (RCRA) Laws and Regulations | US EPA.” *US EPA*, 12 Feb. 2019, www.epa.gov/rcra.
[18] United States Environmental Protection Agency. “US EPA.” *US EPA*, 2017, www.epa.gov.
[19] a.agency. “40 Shocking E-Waste Statistics and Facts - Back Market.” *Back Market*, 19 July 2024, www.backmarket.com/en-us/impact/en-us/e-waste-statistics.
[20] Needhidasan, Santhanam, et al. “Electronic Waste – an Emerging Threat to the Environment of Urban India.” *Journal of Environmental Health Science and Engineering*, vol. 12, no. 1, 20 Jan. 2014, www.ncbi.nlm.nih.gov/pmc/articles/PMC3908467/, https://doi.org/10.1186/2052-336x-12-36.

China

One of the nations that receives the most e-waste each year is China, which promotes recycling and, eventually, the elimination of e-waste and its consequences. As a result, it has put in place several laws to handle electronic trash, such as the Circular Promotion Law, which encourages recycling and reusing materials found in electronic waste to reduce reliance on new resources by establishing recycling infrastructure. To prevent the production of such enormous amounts of waste, the nation also mandates the reduction of electronic waste, highlighting the necessity of using resources more responsibly and designing products with a longer lifespan. China also led the way in implementing Extended Producer Responsibility (EPR), which requires manufacturers to assume full accountability and responsibility for the collection, recycling, or safe disposal of their products throughout their whole lifecycle. Incentives like tax reductions have also been added by this statute for businesses that use waste-reduction techniques or green production technologies.

Furthermore, China implemented the E-waste Recycling Regulation in 2011, which oversees the collection and recycling of electronic trash and mandates the construction of collection systems that are available to all customers in both urban and rural locations. Under this regulation, electronic trash cannot be exported to countries that lack the infrastructure necessary to manage it sustainably and ecologically. Unfortunately, the problems are not absent. In contrast to China's official techniques, informal e-waste recycling is incredibly dangerous and unregulated, but it is nevertheless a lucrative sector because of low labour costs and a strong demand for electronic disposal. The "backyard" recycling and small-scale, frequently family-run workshops that make up the informal sector are typically carried out by underrepresented segments of society. Unwanted devices are purchased by door-to-door peddlers who then sell them to unofficial e-waste recyclers. Informal recycling is frequently carried out outdoors and involves very basic techniques like hand-stripping metals, burning hazardous materials, discarding pieces in waterways, and more. These unofficial activities are usually conducted in suburban regions, where there is insufficient enforcement and oversight, to maintain operations.

India

Like China, India has implemented EPR to hold manufacturers responsible for the product's lifecycle, enforcing sustainability and reducing the use of hazardous materials in electronic waste. In 2016, India also implemented E-waste management regulations that require the development of collection centres for the responsible collection of e-waste. Additionally, this rule requires all retailers to either establish return programmes for e-waste or partner with authorised collection centres. These producers can either independently arrange their own e-waste recycling or work with a Producer Responsibility Organisation to fulfil their EPR obligations. Recycling e-waste has several health and environmental hazards even if it provides many Indians with a source of income. Known as kabadiwalas or raddiwalas (scrap traders), informal waste pickers illegally recycle over 95% of India's e-waste. Since these employees work autonomously and are not affiliated with any official organisation, it is challenging to enforce e-waste laws. Frequently, recyclers use crude recycling methods that might discharge harmful contaminants into the environment. There may be extensive and permanent repercussions if hazardous contaminants linked to the recycling of crude e-waste are released.

Canada

Canada has led progressive politics concerning e-waste disposal. Canada, along with 20 other countries, made history when they ratified the previously mentioned Basel Convention, in response to public outcry and governmental concerns about hazardous waste being exported to developing countries for cheap, unsustainable disposal options. Canada is also the origin of the Right to Repair movement, which called for devices not to be discarded immediately after a malfunction. Through that movement, Kyle Wiens, a worker at a repair company, established iFixIt, an innovative site where consumers are empowered and motivated to repair their electronics, by offering repair guides, community forums and where one can purchase repair kits. In 2008, Canada diverted an impressive amount of 24,367 metric tonnes of e-waste through diversion programs enforced by the government. In 2012, Canada outdid its 2008 score, and diverted 71,000 metric tonnes of e-waste, after more programs were introduced to recycle electronics.

According to statistics Canada generates an estimated 638,300 tonnes of e-waste according to the Bureau of International Recycling (BIR), based in Brussels. In 2021, Ontario announces that producers will be entirely responsible for managing e-waste generated by their

products. That same year, the Recycle My Electronics program scores a network of over 2,500 drop-off locations throughout the country, including return-to-retail locations and special collection events, while a Right to Repair bill (Bill C-272) saw a unanimous vote, marking a huge step towards bypassing laws preventing consumers to conduct regular maintenance and repair on their electronic devices. Lastly, Canada joins the Circular Innovation Council, a new global pact to accelerate circularity in the Information Communications Technology (ICT) sector.

Blocs Expected

Alliance 1

Member states that produce and/or receive e-waste, like countries in Africa, the Caribbean, Eastern Europe, South America and Southeast Asia, as well as China

Alliance 2

Member states that produce but do not receive e-waste, like countries in Western Europe and North America as well as Australia, Japan and South Korea

Timeline of Events

Date	Description of Event
1964	First prototype of the modern computer
1973	Invention of the first cellular phone
1976	Adoption of the Resource Conservation and Recovery Act by the U.S.A.
August 1986	*Khian Sea* waste disposal incident
22 March 1989	Adoption of the Basel Convention
1991	Switzerland inaugurally implements a formal e-waste recycling system
1992	21 countries ratify the Basel Convention
2001	Japan's Law for the Promotion of Effective Utilization is adopted
2003	Kyle Wiens creates iFixIt

2003	Adoption of Waste Electrical and Electronic Equipment Directive by the E.U.
2004	Canada's first provincial program for e-waste recycling enacted by Alberta
2006	Projection by the U.N. shows that 50 million metric tonnes of electronic waste disposed annually
2009	Japan's Law for the Recycling of Specified Kinds of Home Appliances
2011	Enaction of E-waste Recycling Regulation by China
2016	Regulations adopted by India calling for development of collection centres for the responsible collection of e-waste
2019	Statistics show that 7.3 kg of e-waste is produced per capita

Relevant UN Resolutions, Treaties & Events

- WEEE Directive
- Montreal Protocol
- Stockholm Convention on Persistent Organic Pollutants
- Paris Agreement
- International Conference on Chemicals Management

Previous Attempts to Solve the Issue

1. The Basel Convention

   The international agreement known as Basel Convention was created with the express purpose of limiting the flow of hazardous waste from developed to developing countries. The International Atomic Energy Agency regulates the transportation of radioactive waste, which is not covered by it. The Basel Convention also aims to help developing nations manage their hazardous and other wastes in an environmentally sound manner, reduce the rate and toxicity of wastes produced, and guarantee environmentally sound management of wastes as close to the source of generation as feasible. The convention was opened for signature on 21 March 1989, and entered into force on 5 May 1992. As of June 2024, there are 191 parties to the convention. In addition,

Haiti and the United States have signed the convention but did not ratify it. This poses a problem that has led to this Convention failing to succeed, as the United States is one of the largest producers of e-waste as noted before, therefore not solving the problem for countless countries that receive the US e-waste.

2. The European Union's Waste Electrical & Electronic Equipment (WEEE) Directive

   Waste Electrical and Electronic Equipment (WEEE) is the subject of the Waste Electrical and Electronic Equipment Directive (WEEE Directive), a European Community Directive with the number 2012/19/EU. In February 2003, it became European law together with the RoHS Directive 2011/65/EU. For all kinds of electronic items, the WEEE Directive established collection, recycling, and recovery goals. By 2009, a minimum of 4 kilograms (9 lb) per person per year must be recovered for recycling. European manufacturers are subject to restrictions under the RoHS Directive regarding the material content of newly released electronic equipment. This Directive, even though successful in Europe, has not ameliorated the situation in the other continents of the world

3. Solving the e-waste Problem (StEP) initiative

   The United Nations University-affiliated membership organisation Solving the E-waste Problem (StEP) was established to find solutions for problems related to electronic waste. Its members include some of the leading companies in the production, reuse, and recycling of electrical and electronic equipment (EEE), as well as governmental organisations, non-governmental organisations, and United Nations organisations. StEP emphasises a comprehensive, scientific, yet practical approach to the issue and promotes cooperation amongst all parties involved with e-waste. This initiative has relatively failed as it was not taken seriously by major contributors to the problem, such as China, Japan and the United States.

Possible Solutions

1. **Legislation favoring the principles of Design for the Environment**

   Enact legislation requiring manufacturers to follow the principles of Design for the Environment. This would oblige them to produce goods that are easily recyclable, use less hazardous material s, and employ more sustainable resources.

   Governments may mandate ecolabelling for electronics, requiring businesses to adhere to strict

environmental standards that limit their use of particular materials and product lifecycles. Through this legislation, it would make handling e-waste more effective, as products will be differentiated and appropriately placed for their recycling.

2. **Public and private e-waste collection bins**

Governments can enact laws requiring the establishment of both public and private collection systems, such as e-waste-specific collection bins and recycling centres, to enforce the gathering and disposal of electronic waste. Another option is the development and regulation of national electronic waste collection systems that allow consumers to safely dispose of their outdated or obsolete electronics. Through this solution, everyday citizens will be able to become aware about e-waste and how it should be handled, as well as participate actively in recycling their own e-waste that usually ends up in landfills or discarded improperly. Alas, information about e-waste will be more widely-known and accessible to the wider public.

3. **Eco-Friendly devices and recycling programmes**

Governments may set up incentives to motivate businesses to create electronic devices with a more ecologically responsible approach, emphasising the use of easily recyclable materials. Therefore, those materials will be able to not only be handed easily but also be turned to new devices, establishing a cycle that promises a better future for e-waste handling and discardment. Furthermore, you could encourage customers to take part in a recycling programme where they can return their electronic waste for grants or coupons for a particular company (possibly one that produces electronic waste in an environmentally friendly manner), which would encourage the company to follow environmental regulations. That creates better relations between business and clientele, while raising awareness about e-waste pollution to the customers that buy these devices.

4. **Regulation of Informal Recycling Practices**

Many developing countries face issues with informal e-waste recycling, where hazardous materials are improperly handled by unregulated workers. To tackle this, legal frameworks can be put in place to regulate informal recycling practices and ensure workers' safety and environmental protection. Governments can pass laws that prohibit or severely restrict informal e-waste recycling operations. In parallel, they can provide support for certified recycling facilities with proper environmental standards, worker protections, and health regulations. These facilities

should be encouraged to obtain certifications such as ISO standards or environmental certifications that indicate they are compliant with safe e-waste disposal methods. Regulating informal recycling reduces health risks (such as exposure to toxic chemicals like lead, mercury, and cadmium) and environmental damage, which is often caused by open-air burning and improper disposal. Legal requirements can shift informal activities into safer, more controlled processes that benefit both workers and the environment.

5. **Extended Producer Responsiblity (ERP) regulations**

Under the Extended Producer Responsibility (EPR) model, manufacturers of electronic devices are legally obligated to manage the disposal and recycling of their products once they reach the end of their life cycle. This can include setting up take-back programs or partnering with recycling facilities to ensure proper disposal of e-waste. The government can require electronics manufacturers to fund or organize the collection, recycling, and disposal of used electronic goods. This policy shifts the responsibility from consumers and municipalities to the producers. EPR can also include regulations mandating that manufacturers reduce the environmental impact of their products through design improvements (such as using non-toxic materials or making devices easier to recycle). The implementation of EPR reduces the burden on local waste management systems and incentivizes the reduction of waste at the source. This system encourages producers to design products that are easier to recycle and safer for the environment, while ensuring that e-waste is responsibly managed at the end of the product's life. Additionally, it helps to create a sustainable recycling ecosystem and provides funding for waste collection programs.

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