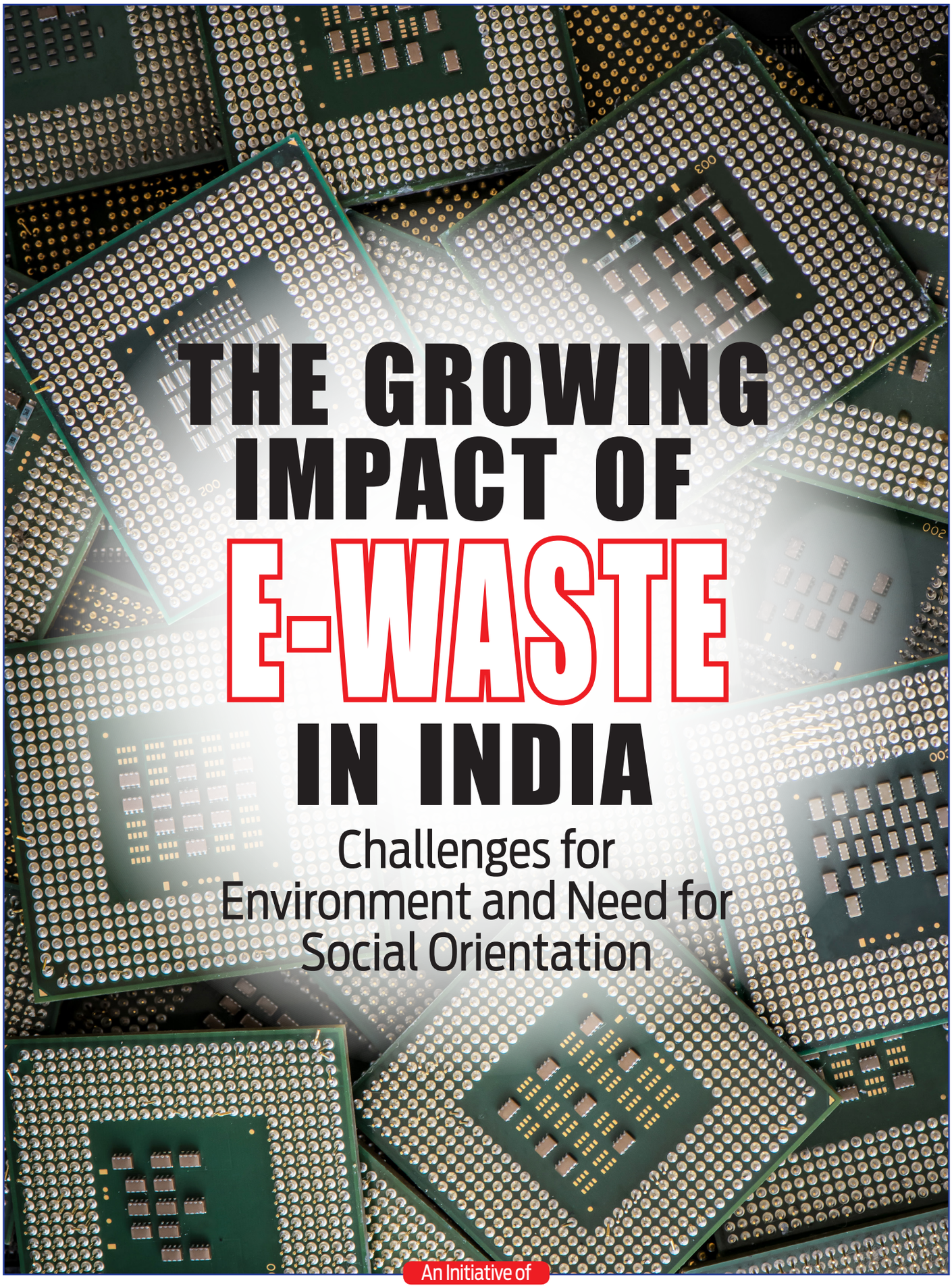

THE GROWING IMPACT OF E-WASTE IN INDIA

Challenges for Environment and Need for Social Orientation

An Initiative of

Policywatch India Foundation

Lions Clubs International

Primus Partners

Contents

INTRODUCTION

The problem of e-waste management has been growing exponentially with the influx of electronics and electronic products in India, but the country has not been able to implement an effective solution to reduce the burden of e-waste and undertake efficient recycling and extraction of end-of-life products.

Annually, 32 lakh tons of e-waste is produced, which is more than double the processing capacity of 14.42 lakh tons. Besides, e-waste management in India is dominated by the informal sector, with more than 95% of the waste being recycled by scrap dealers who dispose it of unscientifically.

However, stakeholders keep shifting the responsibility and blame of e-waste management between each other, and no large players have come forward to attempt to change the system and handle the problem. There is a need to spread awareness how to collect and correctly dispose of e-waste, refurbish & donate salvageable electronics, spread awareness regarding e-waste management, and reduce the environmental impact of e-waste by planting trees for every product donated. It can be a crucial step forward in the fight against e-waste and will push stakeholders to accept responsibility and take control of the problem.

It also aims to spread awareness about the fact that if not discarded properly, e-waste could affect soil through the leaching of hazardous contents from landfills, water through the contamination of rivers, wells, and other water sources, and air due to the emission of gases during the burning of e-waste. If the recycling process is not carried out properly in accordance with specified instructions, it can cause damage to human beings through inhalation of gases, contact with hazardous substances, and contact during acid treatment.

Another major concern related to e-waste management in India is the dumping from some developed countries. Large quantities of used electronics are sold to developing countries due to cheap availability of labour and lack of environmental and occupational standards. If this trend continues, the toxic e-waste of developed nations would flood the world's poorest nations.

A recent round table discussion organised in partnership with the Policy Watch India Foundation focused on engaging key stakeholders in the e-waste industry and discussing possible solutions to mitigate the issues related to e-waste in India. The panelists represented a broad range of perspectives from various walks of life

including academia, businesses and corporates, media and social organizations, and research institutions. The representatives from Bhartiya Janata Party were also present to understand where the government can step up its implementation.

The panelists unanimously agreed that the main problem regarding e-waste management is that 95 per cent of it is being processed by the informal sector, which does not possess the required skills and technology to safely recycle and extract metals from e-waste.

This round table has set the stage for the world's largest e-waste collection and community education campaign. One of the key objectives would be to recycle and reduce carbon dioxide emissions and aid India by contributing to its global commitments towards the environment. It would also impact the lives of lakhs of people by giving them refurbished gadgets and electronics to further their education and life and increase green cover by planting a tree for every e-waste collected.

The campaign can be amplified across regional, national, and digital media. It will incentivize people to donate their e-waste through emotional campaigns, and corporate and school tie-ups. The campaign will be activated across various districts of India and create a national impact in the process of e-waste management.

Out of the gadgets collected, the usable and salvageable gadgets can be refurbished and donated for community education, while the e-waste that cannot be refurbished will be recycled to extract precious metals.

The campaign will also involvesl planting trees for every piece of e-waste that is donated, to further offset the impact of carbon emissions.

The campaign will be partnering with different stakeholders who are leaders in their respective industries to carry out the campaign successfully and efficiently. The recycling partner is Hindustan E-Waste (HEW), while Primus Partners is the knowledge partner for the campaign.

The education partner for the campaign is the National Independent Schools Alliance (NISA) and Policy Watch India Foundation (PWIF) is the advocacy partner.

E-waste and E-waste in India

Electronic waste, or e-waste, are electronic products that are unwanted, not working, or nearing the end of their useful life. It consists of all electronic items such as computers, televisions, mobile phones, VCRs, stereos, and kitchen and household items. As the Information and Communication Technology sector grows, it has enhanced the usage of electronics exponentially.

E-waste is one of the fastest growing waste streams in the country as faster obsolescence and upgradation of electronic products is forcing consumers to discard old products. India's rapidly growing electronics market and increased consumerism has made it the third-largest producer of e-waste in the world. E-waste is particularly dangerous due to the presence of toxic chemicals that naturally release from the metals inside the electronics.

40 MILLION
tonnes of e-waste is generated around the world every year, equivalent to throwing away 800 laptops every second.

If not discarded properly, e-waste could affect soil through the leaching of hazardous contents from landfills, water through the contamination of rivers, wells, and other water sources, and air due to emission of gases during the burning of e-waste. The recycling process should be carried out properly in accordance with specified instructions otherwise it can cause damage to human beings through inhalation of gases, contact with hazardous substances, and contact during acid treatment used in the recovery process.

Today, India has the capacity to process 14,42,000 tons of e-waste annually, whereas the actual production of

Only 12.5% OF e-waste is recycled correctly. 85% of e-waste ends up destroyed, incinerated, or in landfills – releasing harmful toxins in the air.

e-waste is approximately 32,00,000 tons – more than double the processing capacity. E-waste management in India is dominated by the informal sector, with more than 95% of the waste being recycled by scrap dealers who dispose it of unscientifically. Non-formal units generally disassemble products for their usable parts that have a resale value and treat the rest of the material only to recover valuable metals like gold, silver, aluminum, copper, etc. This recycling method is inefficient and may cause leaching of hazardous substances into the air, soil, and water.

The recycling and recovery of e-waste undertaken in formal sector units is carried out in a protected environment and due care is taken to minimize damage to the environment or society. The formal sector uses advanced processes and technologies to ensure the efficient recovery of all metals. Some technology at the formal sector works with zero-landfill approach, thus causing no harm to the environment. Most of the e-waste recycling in India is undertaken in the informal sector, whereas the formal sector is facing problems of insufficient input materials.

Another major concern related to e-waste management in India is the dumping of e-waste from some developed countries. Large quantities of used electronics are sold to developing countries. These products have a high repair capability and high raw material demand, resulting in high accumulations of residue in poor areas in the absence of strong environmental laws. Cheap availability of labour and lack of environmental and occupational standards are the reasons for these e-waste exports. If this trend continues, the toxic e-waste of developed nations would flood towards the world's poorest nations.

E-waste management in India faces a hoard of problems and challenges, and while the problem is far from being solved, a few answers can be found by reframing the question – instead of asking what can be done to reduce and recycle e-waste, the focus should be on how to use the existing channels to reduce the burden. It is imperative to incentivize producers and manufacturers of electronic products to take responsibility for their end-of-life products. Policy directives focused on efficient re-using, recycling, and refurbishing of e-waste is forcing companies to pay attention to reverse supply chain (RSC) management. An RSC consists of activities to reuse or recycle a used product from a consumer or dispose of it properly. The RSC is arranged by five primary steps: product acquisition, reverse logistics, inspection and disposition, refurbishment, and sales.

Existing Government Policies and Interventions

The government of India has actively been formulating and implementing policies for the correct management and recycling of e-waste since 2011. The e-waste Management and Handling Rules were published by the Government of India in the Ministry of Environment and Forests in 2010. The rules are applicable to every producer, consumer or bulk consumer involved in the manufacture, sale, purchasing and processing of electrical equipment or components. These rules define the responsibilities of electronics producers to include the collection of e-waste generated during the manufacturing of products, collection of e-waste generated from the 'end of life' products in line with the principles of Extended Producer Responsibility, setting up of collection centres or take back systems, financing and organising a system to meet the costs of e-waste management, provide consumers with the contact details of authorized collectors to facilitate the return of electronics and electric equipment, and creating awareness regarding the hazardous nature of e-waste.

In 2016, the Government of India published updated e-waste Management Rules, making it mandatory for producers and companies to comply with the Extended Producer Responsibility of recycling e-waste. The Government also notified e-waste (Management) Rules 2022 that will come into effect from April 1, 2023, and apply to every manufacturer, producer, refurbisher, dismantler and recycler of e-waste.

The key provisions of the e-waste (Management) Rules 2022 are:

- Restrictions have been proposed for the use of hazardous substances such as lead, mercury, etc in manufacturing electrical and electronic equipment, as these might have an adverse impact on human health and environment.
- Increased range of electronic goods covered.
- Defining e-waste collection and recycling targets for producers of electronic goods.
- Offering EPR certificates similar to carbon credits.
- Demanding 'environmental compensation' from companies that do not meet their targets.
- Undertaking industrial skill development programs and measures to protect the health and safety of workers engaged in e-waste recycling process.
- Components made by different manufactures required to be compatible with one another, to make end products recyclable and interchangeable.

Despite government interventions, current trends in e-waste management and recycling in India prove that the challenges related to e-waste remain and must be addressed.

Challenges For E-waste **Management In India**

E-waste management and recycling is predominantly an informal sector activity in India, posing a threat environmental and human safety and health. The challenge of safe and sustainable e-waste management is further compounded by ambiguous legislations, a largely unregulated informal sector, poor repair infrastructure, lack of widespread technological knowledge, and increasing electronic imports and usage. India's e-waste Management and Handling Rules were published in 2011, so the question begs – why is this still a large-scale problem 11 years later? The various challenges to e-waste management and recycling in India will be discussed below.

Most of the e-waste is processed by informal facilities and players, and the formal facilities have been operating below the approved capacities because of their inability to source enough waste. Consumers are not incentivized to return their end-of-life products to formal collection channels due to a lack of awareness and the high costs of returning the products. The waste management practices of the informal e-waste sector pose serious environmental and health hazards to the workers as well as the larger public.

INDIA GENERATES 3,50,000 tonnes of e-waste every year and imports another 50,000 tonnes for dismantling. India loses 50% of the gold from e-waste during dismantling, and eventually ends up extracting only 15% of the precious metals.

India has a limited capacity to process large-scale e-waste. There are very few governments approved centres which only constitute for 1/5th of the total amount of e-waste generated each year. Existing e-waste centres also operate far below their capacity due to poorly organized supply chains between them. However, even formal sector recycling is limited to manual sorting and mechanical dismantling of e-waste. There is a lack of industrial e-waste managers that follow appropriate environmental controls that are required for large-scale recovery of precious and base metals. The informal sector extracts metals using methods such as open-air incineration and acid leaching, which are hazardous exacerbate environmental pollution and health risks.

There is a lack of public awareness regarding e-waste hazards in India and therefore, recycling is very low and inefficient. Most consumers do not have enough knowledge regarding the hazardous nature of e-waste components or the penalties for improper disposal of products. There exist very few or no e-waste collection depots or formal recycling centres for consumers to drop-off or donate their e-waste.

Producers have inadequate take-back systems, without any accompanying collection targets and there are no incentives offered to them to take responsibility for their products. Therefore, there is insufficient collection of e-waste via EPR plans.

Round Table Discussion on E-waste

Keeping in mind the challenge of e-waste management and recycling in India, the Lions Clubs International organised a Round Table Discussion on "The Growing Impact of e-waste in India: Challenges for Environment and Need for Social Orientation" in partnership with the Policy Watch India Foundation. The event was focused on the problem of e-waste management in India and possible solutions that can be undertaken to improve the management and recycling of e-waste.

Lions Clubs International is the largest service club organisation in the world with over 1.4 million members in 48,000+ clubs in 200 cities around the globe. India has become the country with the highest number of members with more than 2,90,000 members in over 8600 clubs across the country. The Lions Clubs focus lies in strengthening local communities through hands-on service and humanitarian projects. The club has an impactful presence in India and serves the nation through its communities and members through humanitarian service grants,

projects, and partnerships.

Over the past few years, the Lions Clubs has recognised that the efficient management of e-waste is among the biggest challenges faced by India. Therefore, the round table discussion organised in partnership with the Policy Watch India Foundation focused on engaging key stakeholders in the e-waste industry and discussing possible solutions to mitigate the issues related to e-waste in India. The event was organised with the intention of bringing a multistakeholder view to the problem of e-waste in India.

The objectives of the round table discussion were to discuss pertinent topics related to e-waste management, such as:

- Impact of e-waste on the country, the challenges faced and possible solutions
- India's global commitments towards environment, e-waste policy and its implementation
- Corporate responsibility and its contribution in finding a viable solution to the e-waste issue
- Integrating e-waste awareness in the education curriculum to build a sustainable future

Lions Clubs invited panellists that represented a broad range of perspectives from various walks of life including the dispensation and its various constituents, academia, businesses and corporates, media and social organizations, and research institutions. The panellists represented a diverse mix of companies and industries such as media, policy, education, fintech, consulting, advocacy, etc. Also present at the discussion were representatives from Bhartiya Janata Party, to understand where the government can step up their implementation. The list of panellists is mentioned below:

S. No.	Name	Company	Industry	Designation	Role @ Roundtable
1	Gaurav Choudhary	EarShots & TV18	Media	Consulting Editor TV18 & Founder CEO Earshots	Moderator
2	Rohit Pandey	PWIF	Policy & Social	CEO	Panellist
3	Arvinder Pal Singh	Lions Clubs	Social	International Third Vice President	Panellist
4	Douglas Alexander	Lions Clubs International Foundation	Social	Chairperson	Panellist
5	Abhishek Mishra	Unnnat Bharat Abhiyan	Policy & Social	Chairman	Panellist
6	Kulbhushan Sharma	National Independent School Alliance (NISA)	Education	Chairman	Panellist
7	Thomas Antony	National Independent School Alliance (NISA)	Education	CEO	Panellist
8	Shekhar Sharma	Hindustan E-Waste Management Pvt. Ltd.	Recycler (also deals in Refurbishing)	Founder	Panellist
9	Rajiv Malhotra	PTC India	Ministry of Power	Executive Director & Group CRO	Panellist
10	Dharmender Jhamb	Paytm	Fintech	Vice President and Head - Corporate Development & Public Policy	Panellist
11	Sumanta Datta	Oxford University Press	Education	Managing Director	Panellist
12	Sameer Jain	Primus Partners	Consulting	Managing Director	Panellist
13	Urmi Goswami	Astt. Editor	Media	Economic Times	Panellist
14	Ashish Jindal	Natural Resources Defence Council (NRDC)	Advocacy	Lead - Energy Efficiency & Cooling	Panellist
15	Aroon Aggarwal	Equal Apple Consulting	Producer Responsibility Organization (PRO)	Co-Founder	Panellist
16	Dr. Dharna Tiwari	NABET Accredited Expert (PhD in e-waste)	Enviro Industrial Consultancy	General Manager	Panellist

The round table discussion was structured in a way to pose specific questions regarding the e-waste to the panel of participants. For example, representatives from technology companies were asked if they are developing plans to manage the e-waste generated by their products, while representatives from educational institutions were asked how they could include e-waste awareness in their curriculums. Consultants were asked how they could include the problem of e-waste in their climate research projects. Mentioned below are the key points made by the panellists regarding managing the problem of e-waste.

Mr Gaurav Choudhary

Mr Gaurav Choudhary is a consulting editor for TV18 and Founder & CEO of EarShots. He began the discussion by stating hard facts about the current state of e-waste, mentioning how 56.6% of people change their phones every 2 years, 21% change their phones in less than 2 years, and 11% change their phones every 6 months – leading to a very high frequency of e-waste generation. He also mentioned that countries do not possess the capacity to process the e-waste at the same rate as it is being generated, but the problem does not take priority as it is not visible. He claims that in India, we tend to only address a problem once it reaches a critical stage rather than taking preventive action. He compares e-waste to human waste and states that it is essentially "technology excreta" and needs to be dealt with on a priority basis. He believes that we have an unsaid commitment to the future generations to leave the world in a better condition than we inherited. While Lions Clubs volunteers will do their best to spread awareness and conduct a successful collection drive, they will require support from the community in order to be truly successful.

Mr Douglas Alexander

Mr Douglas Alexander is the Chairperson of Lions Clubs International and has also served as the President of the association. He commented on the gravity of the problem of e-waste management and stated that as soon as someone purchases a new phone, it is already made obsolete and that this problem will only accelerate without direct intervention. He expressed his desire to utilize his network of 1.4 million volunteers to educate and implement sustainable programs for managing e-waste.

Mr Arvinder Pal Singh

Mr AP Singh is the Vice President of Lions Clubs International and participated in the round table discussion as a panellist. He expressed concern about how the problem of e-waste will be aggregated in the coming years as technology evolves to make our lives more efficient and productive. He then introduced Lions Clubs International as a service organization with a strong international presence and experience in addressing conversations around environment and human health, thus justifying their interest in the problems around e-waste. While acknowledging that financial models and economic conditions are important considerations when dealing with any problem, Mr Singh continued to emphasize the importance of voluntary service in the community. He cited this as the basis for the upcoming Lions Clubs e-waste Collection Drive and expressed his optimism at its expected outcome. He stated that while economic considerations may be important, Lions Clubs campaigns are driven on the model of passion, compassion, care, and responsibility towards society, based on which the drive will also work towards spreading community awareness and education regarding e-waste. The collection drive also aims to include workers at the lowest level and create an efficient supply chain for e-waste collection and management.

Mr Aroon Aggarwal

Mr Aroon Aggarwal is the co-founder of Equal Apple Consulting, a Producer Responsibility Organisation. He expressed his beliefs stating the importance of skill development in the informal sector of e-waste management. This would provide informal workers with the ability to handle the recycling technology and manage e-waste efficiently. He believes that if the formal and informal sector work together, this could create an ecosystem of collaboration that will drive safe, effective and efficient ways of managing and recycling e-waste. Mr Aggarwal also mentioned the need to improve e-waste collection methods and offer incentives to both the consumers and producers to dispose of their e-waste correctly. He stated that it is inconvenient and financially unviable for consumers to dispose of e-waste correctly due to the complicated process. Once the process of collection is made easier and the government offers better incentives than kabadiwalas, this would no longer be a consideration for consumers. Additionally, the government needs to implement EPR rules effectively to incentivize producers to take full responsibility for the repair, recycling, and disposal of their products.

Mr Sameer Jain

Mr Sameer Jain is a Managing Director at Primus Partners Pvt Ltd, a consulting firm addressing environmental and policy challenges. Mr Jain drew parallels between e-waste management and solid waste management to state the need for a plan such as Swachh Bharat Abhiyan in the e-waste management ecosystem. He mentioned that the solutions regarding e-waste must be looked at from an angle of speed, scale, and sustainability to ensure that the solutions are quick and efficient, scalable to different regions, and environmentally sustainable over long periods of time. Mr Jain focused on creating an efficient and effective Reverse Supply Chain via which producers could collect the end-of-life products, thus removing the burden from consumers. Mr Jain suggested that companies could create a public private partnership model for e-waste management, or the government could offer incentives to private companies to process e-waste in bulk.

Mr Thomas Anthony

Mr Thomas Anthony is the CEO of the National Independent School Alliance (NISA) that consists of a national alliance of private schools around India with over 1,00,000 members in 24 states. NISA supports 56 states association and work majorly towards the betterment of schools and addressing policy challenges across the country. Mr Anthony believes that it is imperative to include e-waste awareness in school curriculums and activities to ensure that children are aware of its effects from a young age and can also include their parents in this discussion. The school system can be used to improve overall knowledge and awareness regarding e-waste management as well-informed children pass this knowledge onto their parents and other adults, incentivising them to bring about a behavioural change. He believes that including the future generations in current conversations can drive impactful changes over time.

Mr Shekhar Sharma

Mr Shekhar Sharma is the founder of Hindustan E-Waste, working towards generating awareness on the topic of e-waste management. He mentioned that the problem of e-waste has compounded majorly since the pandemic struck in 2020, increasing from 10 lakh tons to 32 lakh tons in 2 years. He contributed this increase to frequent software upgradation and incompatibility of new technologies with existing products. The pandemic further compounded the problem of e-waste by shifting to online modes of education, thus increasing the demand for electronics such as laptops, tablets and smartphones. He recognizes that while producers may not be aware of where their product has ended up, it still must be their responsibility to ensure its safe disposal. Products can be tracked through their unique product IDs, and such technologies should be employed to implement EPR efficiently. Finally, since 90% of the e-waste is handled by the informal sector, Mr Sharma believes it is necessary to include them as key players in the conversation around e-waste.

Mr Sumanta Datta

Mr Sumanta Datta is the Managing Director of Oxford University Press whose focus is on advancing knowledge and learning globally. He stated his belief regarding e-waste being a global problem requiring global awareness and solutions. Mr Datta acknowledged that their role as the press is to be part of the e-waste movement and bringing global learnings to stakeholders in India. He believes that the problem of e-waste affects current and future generations and that managing the problem successfully would require a behavioural change in producers and consumers. Mr Datta mentioned the need for a circular economy regarding electronics and electronic products, but also about standardization of electronic products across brands and producers to reduce redundancy. He mentioned the need for an organized resale market for electronic products, along the model of the automobile resale market.

Ms Dharna Tiwari

Dr Dharna Tiwari is the general manager at Enviro Industrial Consultancy. She is an environmentalist with 15 years of experience with a PhD in electronic waste management. She has 7 years of experience working in e-waste management and conducting research and surveys of stakeholders in the e-waste ecosystem. Dr Tiwari relied on her extensive experience and knowledge on the subject matter to suggest that the best way forward in e-waste management would be to properly formalize the informal sector by upskilling them, providing them with better technologies, and making them part of the formal supply chain. This would result in a higher capacity to manage e-waste and help offload some responsibility from the producers. Additionally, since an informal market for e-waste already exists, this should be utilized to increase recycling capacity. Dr Tiwari mentioned the need for financial intervention from the government in providing the informal sector with technology, land, and training.

Mr Dharmendra Jhamb

Mr Jhamb is the Vice President and Head of Corporate Development & Public Policy at Paytm, and he stated that his purpose for participating in the round table discussion was to learn how IT companies are working on solutions for e-waste management. Mr Jhamb admitted that while inventing and supplying the point-of-sale devices to vendors, financial incentives took priority over the environmental problem of e-waste. But since the ownership of the devices remains with Paytm, they have accepted full responsibility for their repair, recycling and disposal once the merchants wish to dispose of them. He mentions that as a manufacturer of electronics, Paytm cannot outsource the responsibility of managing the e-waste from their devices to the user or consumer. They are building a business model that includes the end-of-life cycle of these devices and their safe disposal.

Ms Urmi Goswami

Ms Urmi Goswami is an Assistant Editor with Economic Times, and has been writing on climate and environmental issues for many years. She mentioned how India is already the third largest generator of e-waste in the world and in need of solutions that will not disrupt people's access to electronics. She stated how only 10% of e-waste is actually recycled, leading to a wastage of energy and minerals. She drew focus on the need for creating a circular economy regarding electronics and electronic products that would become self-sustainable over time and reduce India's e-waste burden. She says "Being good should not become a taxing problem" with respect to the consumer's responsibility for disposing of e-waste correctly. She believes that there should be common e-waste collection platforms that are easily accessible and widely known. Local recyclers and garbage collectors can also be made part of the collection system to reduce the burden on consumers. The consumers should not have to bear the cost and complications of logistics. Ms Goswami also stated that the problem of e-waste cannot be dealt with by simply educating the younger generations and waiting for them to take responsibility for its management and recycling. She believes that the challenge of e-waste management is at the forefront today and must be dealt with accordingly. More emphasis should be paid to generating awareness among adults so that they can be held responsible and take the needed action.

Mr Rohit Pandey

Mr Rohit Pandey is the CEO of Policy Watch India Foundation and was responsible for conducting the round table discussion in partnership with the Lions Clubs International. He mentioned that his passion for managing e-waste led him to organize an e-waste collection drive in this neighbourhood. He also convinced restaurants around the area to offer discounts to consumers that bring in their e-waste to deposit. He then ensured its correct recycling and disposal.

Mr Kulbhushan Sharma

Mr Kulbhushan Sharma is the Chairman of NISA and is focused on creating awareness regarding e-waste management and recycling. He was of the opinion that in the past, electronics such as fridges and TVs were made to last a lifetime and did not become redundant in a couple of years. However, since consumerism and capitalism has been evolving, electronics are made with a view to become redundant faster to drive up demand, thus creating more e-waste. He is of the opinion that awareness regarding e-waste should start at the lowest levels and include students, as well as their parents and grandparents.

Mr Rajiv Malhotra

Mr Rajiv Malhotra is the Executive Director and Group CRO for PTC India. He expressed how it is important to spread awareness to influence behavioural change among consumers and producers to the point that the correct disposal of e-waste becomes second nature, similar to following traffic rules. He mentioned that the success of the Swachh Bharat Campaign in influencing behavioural change regarding solid waste should be taken into consideration and the model should be implemented for e-waste recycling and disposal. The key considerations for this would be to ensure that people are aware of the health and environment damages that can be caused by the incorrect disposal of e-waste.

Key Takeaways & Recommendations

The main takeaways from the discussion were regarding identifying the main problems around e-waste management and possible solutions that could be undertaken by various stakeholders:

- All panel members unanimously agreed that the main problem regarding e-waste management is that 95% of it is being processed by the informal sector, which does not possess the required skills and technology to safely recycle and extract metals from e-waste. Processing of e-waste in an unsafe and unstable environment can lead to health and environmental issues. Further, most of the e-waste that is processed in the informal sector ends up in landfills, instead of being fully recycled.

- Another challenge in the management of e-waste is the fact that stakeholders attempt to push off the responsibility onto each other, instead of working together and finding solutions as one community. Producers of electronics do not have a strict implementation of EPR, thus shifting their responsibility to the consumers. The government, in turn, holds producers responsible for their e-waste but does not have strong monitoring systems to hold them accountable. Without a common outlook to the problem of e-waste, no solution will emerge successful.

- There is a major problem of device redundancy as new devices are purposely made to be incompatible with old ones to incentivise consumers to increase their purchases. Electronic companies place profits above environmental issues, thus exponentially increasing e-waste.

- Consumers can earn a small amount of money by selling their old products to informal dealers, whereas there is no economic benefit in returning the product back to the producer. That is why even with a well implemented EPR program, consumers would prefer to sell their products in the informal sector.

The possible solutions discussed by the panel were diverse and would require a multistakeholder approach to the problem of e-waste management.

Capacity Building Most of the solutions focused on addressing the system failure by formalizing the informal sector, thus increasing the capacity to process, recycle and resell e-waste in a sustainable and safe manner. The newly formalized sector can support producers in the collection of e-waste.

Skill Development The informal sector can be formalized by conducting education and training programs that allow for a more efficient procurement and recovery process.

Technology Upgraded recycling technology should be brought to India to efficiently recover precious metals from e-waste and increase resource efficiency. This technology must also be made available to small players so that there is standardization across the e-waste management and recycling ecosystem.

Points of Collection Producers and manufacturers can create designated points of collection for end-of-life products and undertake campaigns to make consumers aware of these. Consumers can be offered certain financial incentives upon bringing their e-waste to these PoCs depending upon the condition and valuation of their products.

Reverse Supply Chain Focus on creating a seamless Reverse Supply Chain to ensure that end of life products reach the correct processing facilities. Manufacturers and authorized resellers that are allowed to sell electronics and associated products, should also be made responsible for their collection and processing at the end of their life.

Governance The government can help spread awareness about how to deal with e-waste, and levy fines on both producers and consumers if the reverse supply chain is not followed for the correct disposal of e-waste

Addressing E-waste Management in India

The current management and recycling processes of e-waste poses a challenge for the Indian e-waste sector, and thus there is an urgent need to move from a linear and reuse economy towards a circular economy. While a linear economy focuses on profitability irrespective of the product life cycle, the circular economy targets sustainability and recycling.

There is a need for a sound market-based incentive scheme to encourage all stakeholders to voluntarily adopt e-waste recycling. The government should encourage new entrepreneurs to drive this challenge by providing them with the necessary financial support and technological guidance. Incentives could be in the form of tax concessions or rebates.

Additionally, the e-waste collection targets need to be reviewed and monitored regularly to ensure compliance in the formal sector across India. The recycling capacity of the formal sector can be expanded by co-funding infrastructural upgrades and installing processing systems at existing recycling centres.

Further, there should be schemes to formalize and integrate the informal e-waste management sector with the formal sector to create a transparent system of recycling and a better control on environmental and human health impacts. To do this, states can apply for national urban development funding schemes to link the informal network of decentralized collection and recycling units with existing large-scale industrial recycling and processing centres.

The informal e-waste management workforce can be upskilled and trained, particularly for handling and dismantling hazardous materials. They can be trained using innovative short courses and programs and can obtain certifications for their trainings. These workers can then be integrated into the formal workforce managing e-waste.

The Indian government can promote joint ventures between international and domestic companies for setting up large industrial e-waste recovery plants to improve the recycling efficiency in India. The government can also promote and fund research initiatives that develop innovative technologies indigenously, for recycling and transforming e-waste streams into high-value products.

To promote a holistic system of e-waste management and recycling, action items can be divided into 5 major pillars:

1. **Policy:** India needs a holistic e-waste policy that defines a sustainable reverse supply chain and works towards regulating the informal sector. This can be done by incentivising producers and companies to offer training courses and certifications to players in the informal sector that undertake the responsibility of repairing, recycling, and reselling electronic products. Incentive systems for consumers to return e-waste sustainability to authorised procurers. E-waste collection should also be made easy and hassle-free for the consumers by offering home-collection services. Creation of an Electronic Upgradation Policy that defines the responsibility for manufacturers to receive and effectively upgrade their products to donate or resell in the market.

2. **Infrastructure:** It is imperative to build sustainable infrastructure for managing e-waste, including disposal zones, green transport in the supply chain, warehouses for storing e-waste, etc. India also requires manufacturing capability to be able to produce sustainable, good quality products with a longer lifespan, and guaranteed end-of-life procurement.

3. **Capacity Building:** Industry driven training programs for players from the informal sector in recycling, repairing, and procuring parts from end-of-life electronics. This can increase India's capacity to manage e-waste exponentially.

4. **Technology:** India does not currently possess the technology to extract valuable metals from e-waste in a sustainable manner, thus resulting in them going to waste. This technology must be imported or created to be able to extract the wealth from waste.

5. **Monitoring:** Accountability and transparency needs to be a core component of the reverse supply chain as well as recycling and repairing policies. There needs to be a feedback and monitoring loop for all stakeholders, including consumers, producers, repairmen, etc. Each electronic device's unique product number must be accounted for through its life and recycling process.

E-waste management must be approached through a lens of sustainability, scale, and speed, so that larger quantities of waste can be managed efficiently with least damage to the environment.

E-waste Collection Drive

This round table event was organized to set the stage for the world's largest e-waste collection and community education campaign that will be organized under the aegis of the Lions Clubs International, with the objective to:

- **Recycle and reduce carbon dioxide emissions, and aid India by contributing to its Global Commitments towards Environment**
- **Impact the lives of lakhs of people by giving them refurbished gadgets and electronics to further their education and life**
- **Increase green cover by planting a tree for every e-waste collected**

The campaign will be amplified across regional, national, and digital media. It will incentivize people to donate their e-waste through emotional campaigns, and corporate and school tie-ups. The campaign will be activated across various districts of India and create a national impact in the process of e-waste management. Out of the gadgets collected, the usable and salvageable gadgets will be refurbished and donated for community education, while the e-waste that cannot be refurbished will be recycled to extract precious metals. Lions Clubs will also plant trees for every piece of e-waste that is donated, to further offset the impact of carbon emissions. Lions Clubs aims to collect 1,00,000 pieces of e-waste through this drive including phones, wires, WMs, MWs, speakers, TVs, music systems, etc.

Lions Clubs will be partnering with different stakeholders who are leaders in their respective industries to carry out the campaign successfully and efficiently.

The recycling partner is Hindustan E-Waste (HEW) – a business that focuses on the collection and storage of e-waste, segregation of e-waste as per government norms, functional testing, dismantling, data destruction, disposition of end-of-life electronics, and organizing scrap recovery and recycling. HEW and Lions will work together to collect e-waste across various cities and recycle it as per prescribed norms. HEW will also donate the sum amount equivalent to the e-waste collected to Lions Clubs and offer guidance through the collection drive.

Primus Partners is the knowledge partner for the campaign. Primus Partners is a leading business consultancy, offering policy advocacy and research services in the domains of public policy, impact realization, investment realization, sectoral potential realization, and technology potential realization. Primus will extend their extensive knowledge about e-waste and help Lions Clubs in generating various reports and other content for the campaign.

The education partner for the campaign is the National Independent Schools Alliance (NISA). NISA is striving to create a systemic change with a focus on building a strong platform for creating awareness around BPS. It aspires to achieve policy change and improve school quality. NISA will launch the e-waste collection drive campaign on their website for schools to register to participate. They will also plan a virtual event to launch the campaign on a nation-wide level.

Policy Watch India Foundation (PWIF) is the advocacy partner. PWIF aims at impacting the policy formulation process with an emphasis on good governance practices, efficient implementation mechanisms, and evidence-based policymaking including policy audits and evaluation, in the larger interest of the nation. PWIF will help Lions Clubs in extending their platform by organizing round table discussions on e-waste management. PWIF will also assist in preparing the reports for the discussions and propagate these in the right corridors.

About

Policy Watch India Foundation

Policy Watch India Foundation (PWIF) is India's leading non for profit and non-partisan think tank for public policy which is fully dedicated to do research & provide a robust platform to carry out researches and promote democratic debate on the most important economic and social issues that affect people's lives.

PWIF strives to bring together the best minds to ideate on key national and international issues; promote initiatives that further the causes of harmony & inclusive developments; monitoring social, economic and political trends that have a bearing on India's unity and integrity; critique public policy and the working of democratic institutions and constitutional bodies; and evolve benchmarks for good governance and efficiency in public institutions. We aim to productively impact policy evaluation & formulation process with an emphasis on good governance practices, effective implementation frameworks and evidence-based policymaking. All keeping the progress and larger interest of the nation building in mind.

PWIF is working on several study projects & discussions and come out with reports towards the same as well. The team comprises of very senior members from the social ecosystem including members of dispensation and its constituents, professionals from across industries, scientists, academicians, other KoLs etc. PWIF always remains committed to safeguard the intellectual freedom of each stakeholder.

About

Lions Clubs International

Lions Clubs International is the largest service club organization in the world, with more than 1.4 million members in over 48,000 clubs. These members are serving in 200 countries and geographic areas around the world. India has emerged as the country with the highest number of Lions members with more than 2,90,000 members in 8,600 clubs across the country. Lions Clubs International was started in 1917 with a view to strengthen local communities around the world through hands-on service and humanitarian projects.

Lions Clubs around the world rally around the five global causes of vision, hunger, environment, childhood cancer and diabetes. The Clubs also provide valuable local services to the youth such as mentoring, health programs, and scholarships. Lions Clubs International are a vetted, resolute and dynamic organization that possesses the means to enable corporations, foundations, and governments to create considerable change with precision. The organisation serves as a connection to the community, a trusted advisor on driving change, and a global organization that can scale projects from a local level to worldwide impact.

About

Primus Partners Private Limited

Primus Partners is a consulting company based in India, offering solutions in 5 key areas that represent the universe of ambitions asks by different kinds of organizations spread across the country. These include impact realisation, public policy realisation, investment realisation, sector potential realisation, and technology potential realisation. Primus Partners has been set up to partner with clients in "navigating" India, by experts with decades of experience in doing so for large global firms. With a great focus on the principle of "Idea Realization," Primus Partners adopts a unique approach to examining futuristic ideas required for growth of an organization, sector, or geography, from the point-of-view of ground implementation.

The firm's core strength is the founding partners, who are goal-oriented, with extensive hands-on experience and subject-matter expertise, which is well recognized in the industry. Primus Partner's core founders form a diverse cohort of leaders with experience across industries (Public sector, WASH, Transport, Education, etc.), experience of working with leading multi-lateral agencies such as USAID, WHO etc. and with varied specialization (engineers, lawyers, tax professionals, management), etc. in India as well as the South-East Asia region.

Primus Partners brings the experience of working in more than 30 countries with the private and public sector, including working with the Government of India. They also represent 200 person-years of experience in leading global and Indian consultancy firms and the public sector. Further, our leaders have led transformational projects in India related to Swachh Bharat, AMRUT, Jal Jeevan Mission (Urban), National/Sub-National Economic Development, Financial Monitoring, Ease of Doing Business initiative by the Central and State Governments, Make in India, Start-up India, Global World Food India, World Bank India Assessment, etc.

The founding team is supported by the distinguished advisory board that includes experts with leadership experience across government, multi-lateral agencies, large corporates, and notable civil society organizations.

CONCLUSION

The problem of e-waste management has been well-established since 2010 with the influx of electronics and electronic products in India, but the country has not been able to implement an effective solution to reduce the burden of e-waste and undertake efficient recycling and extraction of end-of-life products. The conversation around e-waste has been unable to produce any long lasting and efficient results, and India continues to suffer from roadblocks when attempting to implement defined frameworks and policies.

Stakeholders have continued to shift the responsibility and blame of e-waste management between each other, and no large players have come forward to attempt to change the system and handle the problem. The Lions Clubs International has stepped into this void by organizing the world's largest e-waste collection drive and education campaign with the aim to collect and correctly dispose of e-waste, refurbish & donate salvageable electronics, spread awareness regarding e-waste management, and reduce the environmental impact of e-waste by planting trees for every product donated. The success of this campaign will be a crucial step forward in the fight against e-waste and will push stakeholders to accept responsibility and take control of the problem.

Policywatch India Foundation

Lions Clubs International

Primus Partners