



# AWARENESS PROGRAMME ON ENVIRONMENTAL HAZARDS OF ELECTRONIC WASTE



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An Initiative of

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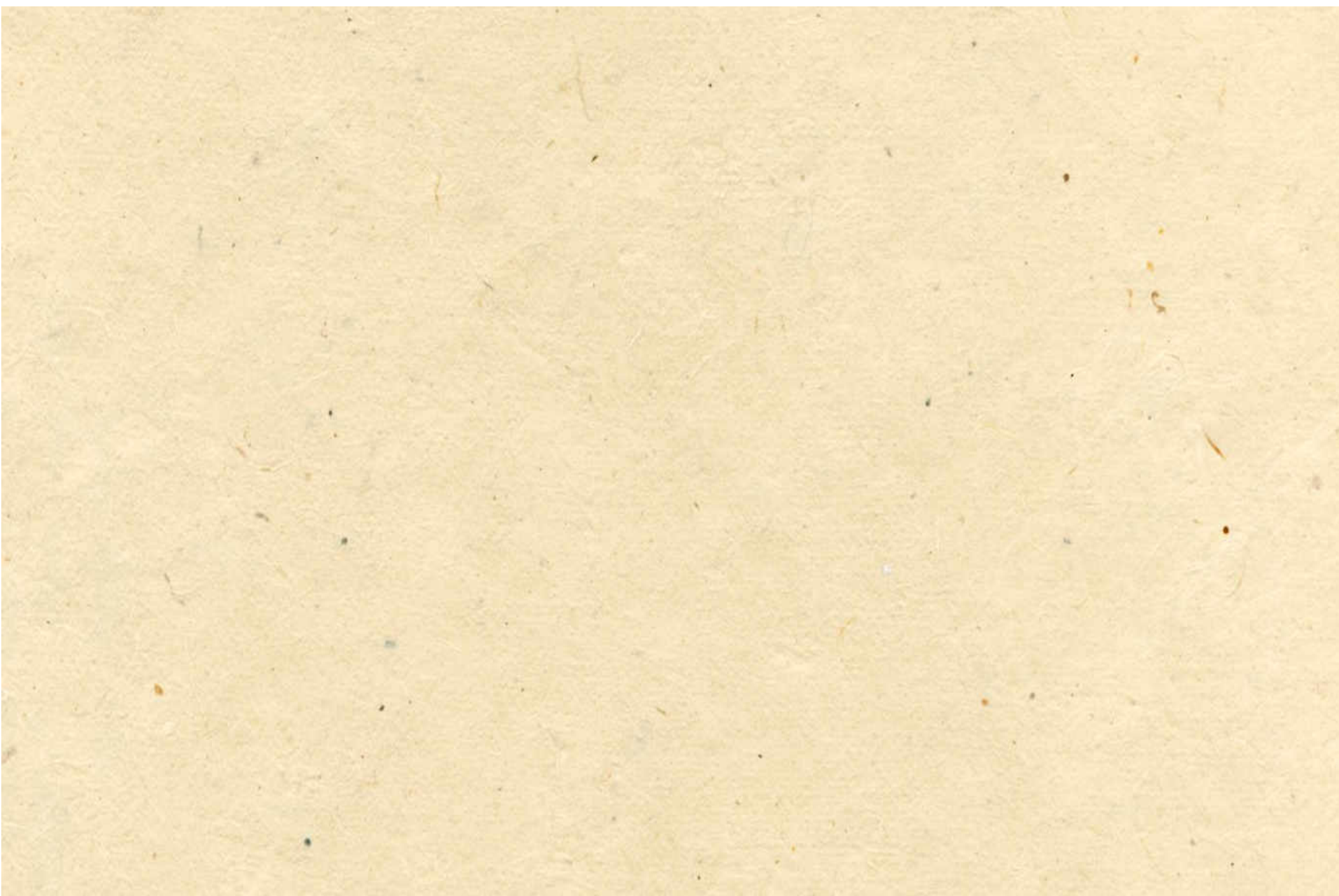


सत्यमेव जयते

Ministry of Electronics and Information Technology  
Government of India



**Digital India**  
Power To Empower







**Shri Ravi Shankar Prasad - Minister of Law  
& Justice and Electronics & Information  
Technology, Government of India**



रविशंकर प्रसाद  
**RAVI SHANKAR PRASAD**

मंत्री, विधि एवं न्याय एवं इलेक्ट्रॉनिक्स और सूचना प्रौद्योगिकी, भारत सरकार  
Minister of Law & Justice and Electronics & IT, Government of India

**MESSAGE**

Promoting electronics and electronics manufacturing sector in India has been a key focus of our Government. The digital economy, including electronics sector, is an important driver of the Indian economic growth story. Electronics has not only been a tool for doing business and for enhancing ease of living, in India it has also been a tool for bringing about social inclusion and better digital delivery of services to common Indian erasing the digital divide. Under the visionary leadership of our Prime Minister Shri Narendra Modi, we are committed to taking forward electronics manufacturing and increasing its usage in India in all spheres. In the past 4 years, electronic manufacturing in India has increased at a phenomenal rate.

The fast pace of innovation and technology and new areas of application leads to fast obsolescence of electronics products which also creates an ever increasing volume of electronics waste (e-waste) which needs to be managed in a scientific and systematic manner.

One of the concerns with regard to e-waste management in India is the recycling and disposal of e-waste in the informal sector, often by unscientific means which creates serious environmental hazards. The challenge is compounded by a general lack of environmental awareness in public, consumers, producers, regulators and recyclers. As part of the visionary Swachh Bharat Abhiyan, we are committed to creating a cleaner and environmentally sustainable India. Taking forward this vision in our Ministry, I am happy that we have taken the initiative to generate awareness about the e-waste recycling in informal sector and making the public and industry aware of the best practices on alternative safe methods to promote responsible, safe and environmentally sustainable of disposal of e-waste.

I wish all the very best to the organizers and participants of the programme in their noble endeavour.

**(RAVI SHANKAR PRASAD)**





Ministry of Electronics and Information Technology  
Government of India



एस.एस. अहलुवालिया  
S. S. AHLUWALIA



सत्यमेव जयते

राज्य मंत्री  
इलेक्ट्रॉनिक्स और सूचना प्रौद्योगिकी मंत्रालय  
भारत सरकार  
Minister of State  
Electronics & Information Technology  
Government of India

### Message

Electronic waste (e-waste) is a reality in our society due to the growing dependency on electronics in every sector of life. Faster obsolescence of old products and demand of improved products has led to generation of e-waste.

E-waste is a global challenge and India also has to manage its growing volume of e-waste using safe and environmental-friendly means. Recycling of e-waste in informal sector by unscientific means causes significant damage to the environment. All the stakeholders including the consumers, producers and regulators require requisite knowledge on best practices of safe disposal of e-waste.

The efforts of Ministry of Electronics and Information Technology in creating awareness about the ill effects of e-waste recycling in informal units and suggesting safe alternative methods are worth appreciating. Hope this initiative would help the stakeholders manage e-waste in an environmentally responsible and sustainable manner.

I wish all the best to the Ministry in their efforts.

(S S Ahluwalia)



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Shri S S Ahluwalia - Minister of State,  
Electronics & Information Technology,  
Government of India





**Shri Ajay Sawhney, I.A.S - Secretary, Ministry  
of Electronics & Information Technology,  
Government of India**



सचिव

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सचिव  
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भारत सरकार  
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### **FOREWORD**

Electronic products have become an integral part of our daily life for providing comfortable, easier and faster lifestyle, which on the other hand has created huge challenge of discarded end-of-life products, i.e. electronic waste (e-waste). Major cities are generating tons of e-waste, a significant part of which is recycled in informal hands, without consideration for health or environment.

E-waste, however, contains significant amount of precious materials, which if recycled at industrial scale can become a viable business and can generate employment in the country. Electronic products also contain toxic substances due to their functional requirements and if proper care is not taken during recycling after end-of-life of the products, their unscientific disposal or recycling can have an adverse impact on human health and environment.

This Ministry's efforts in creating awareness amongst all stakeholders, from the manufacturers and users to the informal operators, is an endeavour, to help change the mindset of the citizens towards safe disposal of e-waste. We acknowledge the contribution of various agencies, including STPI, NIELIT, MAIT, NASSCOM, CEAMA and PHD&CCI in successfully implementing the first phase of programme.

We are committed to continue this programme to create on the hazards of e-waste recycling in the informal sector and to educate all the stakeholders about alternative safe disposal of e-waste in the country

(Ajay Sawhney)

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## PROGRAMME OVERVIEW

In order to effectively implement the E-waste (Management) Rules, 2016 there is a pertinent need to create awareness among the public about the hazards of recycling E-waste by the unorganised sector and to educate them about the proper methods of disposing them.

Towards this, an “Awareness Programme on Environmental Hazards of Electronic Waste” has been initiated since March 2015 under “Digital India Initiative”.

In the pilot stage, a city each in the 10 identified states would be covered under the project within a duration of 5 years. The key stakeholders involve Govt. officials, Schools, Colleges, RWAs and Localities, Bulk Consumers, Dealers, Refurbishers, Informal Sector and Manufacturers.

The project has three components

- Content Development
- Awareness Generation amongst Various Stakeholders
- Inventory Assessment





## KEY STAKEHOLDERS

Stakeholders have been identified and selected to ensure the message of safe disposal of E-waste permeates through the society. This is important in order to make them aware of the hazards of improper E-waste disposal and its irreversible damage to our environment.

### Govt. Officials

Government Officials are the important stakeholders in E-waste value chain. Under the E-waste awareness programme, Government Officials are made aware about E-waste, its hazards and management in order to inculcate better implementation of E-waste Management Rules, 2016 in their office premises. The capacity building amongst officials of State Government and other associated Departments through customized training programmes was, therefore, essential. This training improves their understanding on the requirement of E-waste channelizing to authorized recyclers or sending them back to its manufacturers through Extended Producer Responsibility clause promised in the Rules. Capacity building also helps them to improve implementation of appropriate disposal mechanism of E-waste in order to protect the environment.



### College

The youth, youngsters under the age of 25, comprise the largest section of India's population. It is imperative to engage with this community, the future of the country, since they form the largest share of technology users.



### Schools

It is important to catch the young to inculcate best possible habits right from their very first brush with technology and electronic equipment.



### RWAs and Localities:

Over the last 30 years, the citizens of India have become the largest users of Electrical and Electronic Equipment (EEE) in the world and hence one of the largest producers of Waste Electrical and Electronic Equipment (WEEE) as well. They must be educated about the pertinent issues that can potentially affect the generations to come.



### Bulk Consumers

Institutions like corporate houses, research institutes, media houses etc that rely heavily on technology and technological equipment for their businesses are the largest user of EEE in the country. The constant upgradation of technology renders most of the electronic equipment ineffective for use in a short time and hence has a high obsolescence rate. The E-waste rules mandate this stakeholder to dispose off their WEEE in a manner that ensures recycling through environmentally sound procedures. Awareness amongst this stakeholder will lead to about 75% of all WEEE to be recycled in a proper manner.







## Dealers

They are the largest sellers of IT in the country and have the potential to serve as the largest collectors of WEEE from individual consumers. This will ensure that WEEE flows back into the formal chain so that it can be recycled in an environmentally sound manner.

## Refurbishers

India is characterised by a behaviour of extracting maximum life from any consumable item; a habit of repairing items from available resources and extending their life thrives. The refurbishers are also stakeholders that produce a lot of E-waste during these repairs. The law and its guidelines make refurbishers responsible for disposing off the E-waste generated during the repair process in an environmentally sound manner.



## Informal Sector

The informal sector is the local 'kabadi' who collect all forms of waste of value and recycle them. However, this recycling of E-waste is mostly done in an unsound manner which is hazardous for their health as well as the environment at large. It is important that they are educated about the issues related to improper recycling so that they can protect themselves as well as their surroundings.

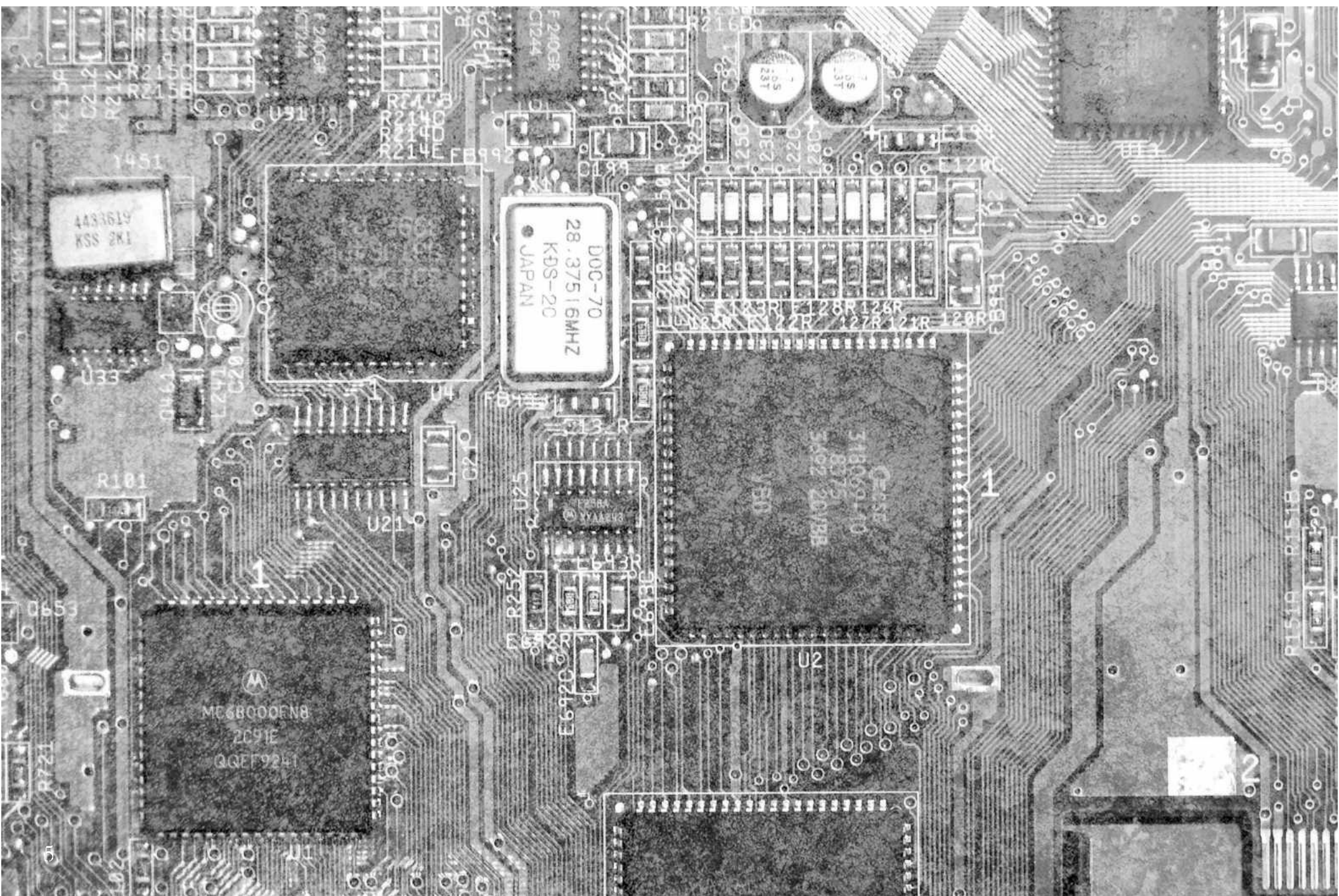
## Manufacturers

They are the most important stakeholders as far as the E-waste Rules, 2016 are concerned. With Extended Producer Responsibility and fixed targets for collection within the same, they have been mandated to ensure that they collect E-waste once a product reaches end of life. Furthermore, they are also responsible for ensuring proper collection channels are set up to aid disposal of E-waste.



To train each stakeholder, training manuals are developed for conducting training programs. The trained group of individuals would then be able to act towards management of E-waste within their respective capacity and environments.

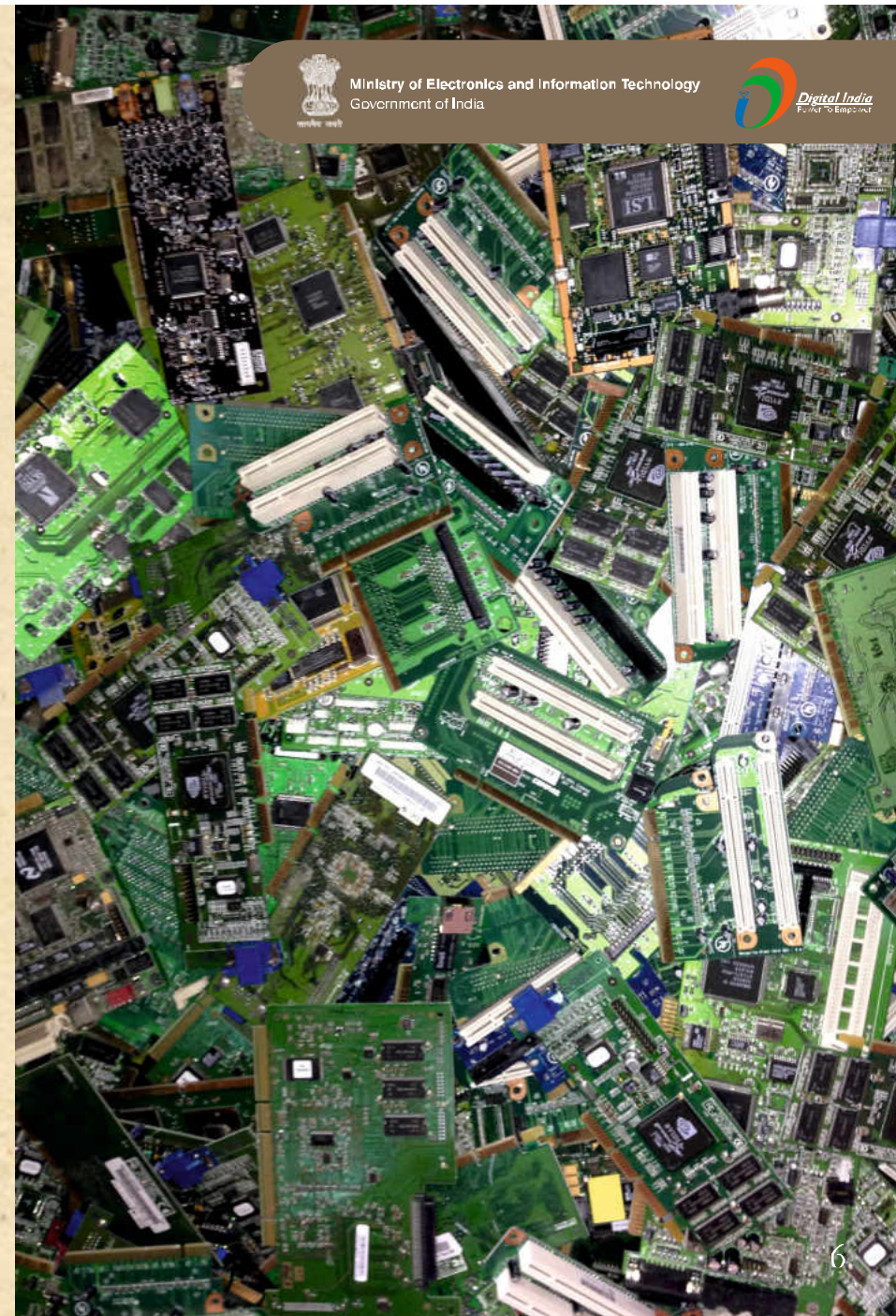






## DESIRED IMPACT

- Under Digital India campaign, this project will spread awareness which will impact the overall growth of the country by decreasing environmental problems and helping to conserve natural resources.
- Proper treatment of E-waste recovers valuable materials from old electronics that can be used to make new products. As a result, we save energy, reduce pollution, reduce greenhouse gas emissions and save resources by extracting fewer raw materials from the earth.
- Proper disposal of E-waste will create jobs for professional recyclers and refurbishers and create new markets for the valuable dismantled components.
- The project will help take care of the responsibilities of the producers to inculcate the Principle of EPR (Extended Producers Responsibility) and follow the mechanism for channelization of E-waste to registered dismantler or recyclers.
- The programme will work towards ensuring the responsibilities of other stakeholders are also met for effective implementation of the E-waste Management Rules, 2016.
- The programme will also help in creating awareness about reduction in the use of hazardous materials in the manufacture of electrical and electronic equipment and their components.







## GENERATING CONTENT TO CREATE AWARENESS

### Training Material Overview

Requisite training material in the form of manuals, videos, posters and jingles have been developed for different stakeholders of the E-waste management ecosystem. The content is also created in local languages. Tools such as a mobile app and website are developed for dissemination of information to create awareness. The awareness material will be used during workshops for educating key stakeholders towards recycling best practices and legal provisions on E-waste disposal.

The program also aims to widen its reach across India to help inculcate better disposal practices amongst all stakeholders thereby reducing the environmental impact of improper handling and recycling of E-waste.

There has been comprehensive content developed and several tools designed for this project. The training manuals will help participants to engage with the subject matter and select right approach and tools in identifying and involving worthy stakeholders.





## TRAINING MANUALS

### Objective

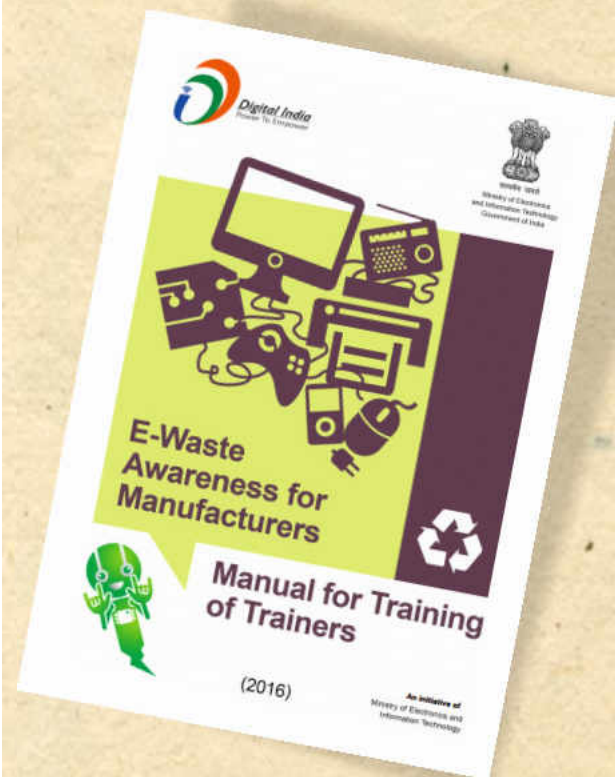
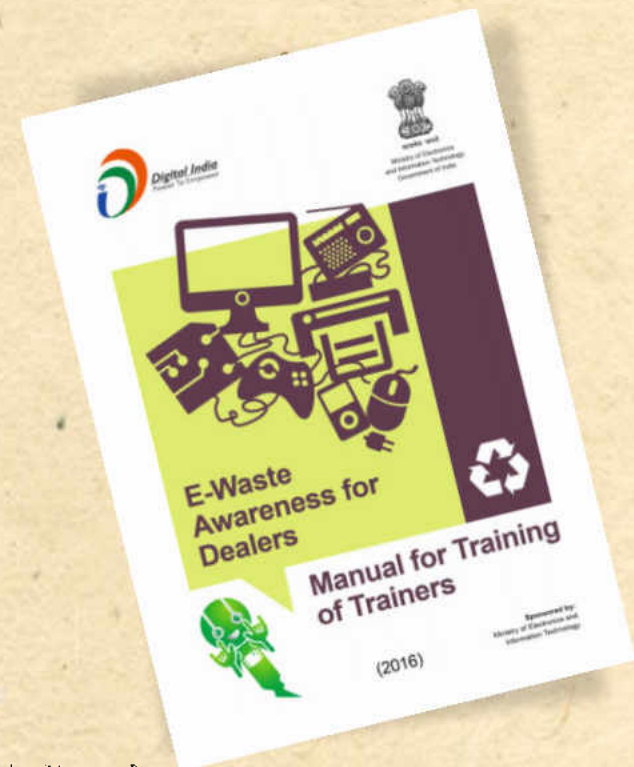
**To educate** trainers who would further train participants about E-waste.

**To ensure** key materials are available for trainers to refer, organize and facilitate training on E-waste.

**To serve** as a compilation of information on the following issues related to the subject of E-waste:

- What is E-waste?
- What are the categories of E-waste?
- What is the volume of E-waste generated globally and in India?
- What are the hazardous substances in E-waste?
- What is the impact of unscientific processing of E-waste on health?
- What are the methods used at present by the informal sector for treating E-waste?
- What is the National Environment Policy of India?
- The E-waste (Management) Rules, 2016 and the challenges of implementing the Rules.
- Defining sustainable consumption and lifestyles of Health and Sustainability (LOHAS)
- Guidelines for setting up of collection centres for E-waste.
- What is carbon footprint?
- How to measure carbon footprint?
- What are the strategies to reduce carbon footprint?

**To serve** as a guide for implementing initiatives that can contribute to safe E-waste management in India.







## MANUAL DESIGN

Eight manuals have been developed, one for each stakeholder: school and college students, RWAs and localities, bulk consumers, dealers, refurbishers, manufacturers and the informal sector. The manuals are being used to train master trainers from each stakeholder segment and also help them to conduct workshops. The key sections for the manuals for the eight stakeholders include:

- Details of the project outlining its usage methodology for the stakeholder.
- A case study, close to real life, to enable instant connect with the problem for the stakeholder.
- References and links for further reading on the subject by experts.
- Session plans to conduct trainings with the focus on connecting with the problem for the stakeholders, exchanging information and preparing for its real life dissemination to resolve issues.

Training manual for the manufacturers has been designed to make them aware of the regulations enlisted in E-waste Management Rules 2016 and how to manage the responsibilities they have been entrusted with.





## TRAINING TOOLS

### Harvard case methodology

The case method is a teaching approach that uses decision-forcing cases to put participants in the role of people who were faced with difficult decisions at some point in the past. A similar approach has been used in the manuals for different stakeholders. Excerpts of the case study are presented herewith:

The case study has been divided into screenplays across three different acts. In the course of these acts, the protagonists go through different sets of learning which then translate into a goal to ensure improved knowledge and implementation of the E-waste Rules, 2016 for that stakeholder. This will ensure environmentally sound management of the generated E-waste.

The case study can be enacted in schools to enable students to learn through this experience and ask questions on the subject to enhance their understanding. This will lead to imbibing the learning into practice.

Similar case studies have been presented in the manuals for college students (youth), RWAs and localities, Bulk consumers, Dealers, Refurbishers and Informal sector.







## Session plans

This curriculum has used Donna E. Walker's 'Learning Cycle' to design each of the sessions. Each step of the Walker's cycle serves a specific purpose thus ensuring that the learning effectiveness is maximized. The details of the five steps of the Walker's Cycle are explained below:



**Mind Jog:** This step helps to start the session on a positive note and arouse curiosity about the issue the session relates to. Mind jogs need to be short and crisp, and lead into the topic.



**Personal Connection:** This step helps to bring out the 'what's in it for me' connection and prepares the participants for absorbing new knowledge. The exercises used at this stage try to make the session relevant to learner's real world 'as is'.



**Information Exchange:** The focus of this stage is to build new knowledge, facilitate exchange of information between and among the participants and deduce some key concepts through discussion and presentation to supplement participants' information. In this stage, the facilitators allow the participants to come up with concepts instead of downloading it for them and allow extensive peer discussion and learning. The facilitators here need to concentrate on refining and building on participants' inputs.



**Information Application:** The purpose of this stage is to build confidence in the participants about the new knowledge, support them to apply the key concepts learnt to realistic scenarios (thereby reconfirming the learning of the previous stages), and to facilitate a multi perspective view. This stage also seeks to add fresh insights to the concepts and apply the skills to real life situations without taking real risks. For this curriculum, we have tried to ensure that the activities are drawn from the participants' background and experiences and enough complexity has been built into it in order to get a variety of responses.

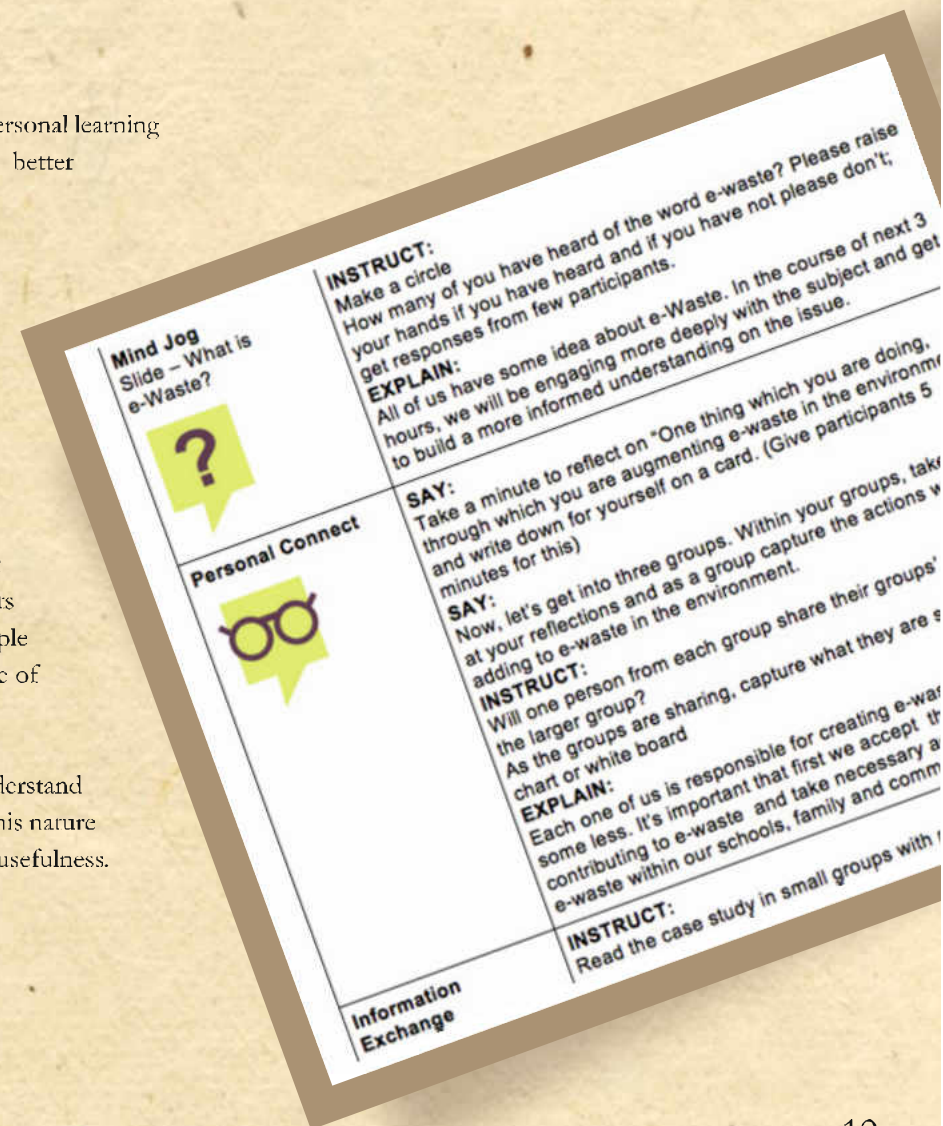




**Real World Connection:** The activities in this stage seek to elicit personal learning and satisfy the participants that new knowledge will lead to a better performance. The design of this stage enables participants to connect personal learning to learning from the session, as the facilitator helps them set up clear performance oriented goals, which are also specific, measurable and realistic. This way both the facilitators and the participants get a chance to informally assess how effective the participants' learning has been.

The curriculum design and session plans ensure the participants in the workshops are able to gain an understanding of the subject in a practical manner and get a hands-on experience. The session starts with tickling their minds so that they can begin to think about the problem and share their thoughts with others. Group learning helps to understand the subject from multiple perspectives and dimensions which can then be related to personal experience of each participant.

Group work helps to exchange information within participants and also understand practical experience of individuals within the group. Experiential learning of this nature helps the participants to imbibe concepts as well as understand their practical usefulness. This is likely to help them more in implementing the same in the real world.



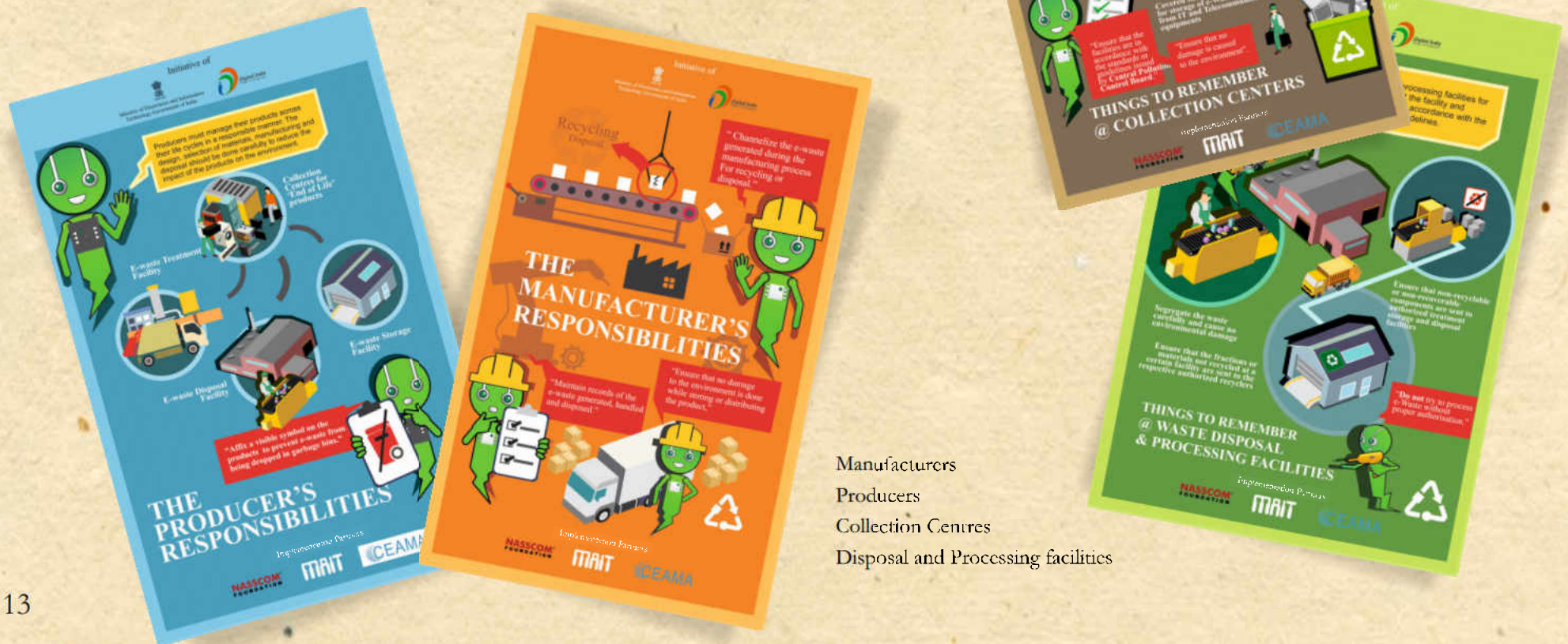




## POSTERS

In two phases, posters were created to serve as a visual communication tool. In the first phase, posters were aimed to create awareness amongst the key stakeholders, Manufacturers and Producers on responsibilities and important things to remember at collection centres, disposal, and processing facilities for safe disposal of E-waste.

In the second phase, the posters were designed to reach out to the key stakeholders i.e. bulk consumers and individual consumers about the widespread hazards of E-waste and to develop best practices for safe disposal of E-waste.



Manufacturers  
Producers  
Collection Centres  
Disposal and Processing facilities





Ministry of Electronics and Information Technology  
Government of India



Bulk Consumers

Individual Consumers

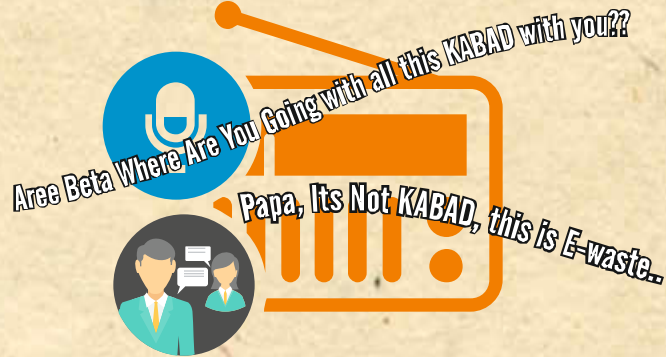




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## RADIO JINGLE

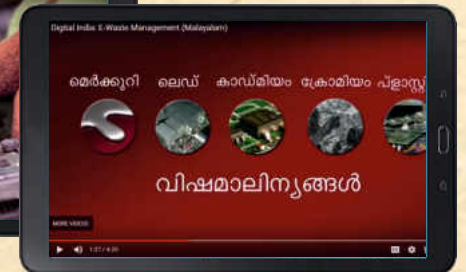
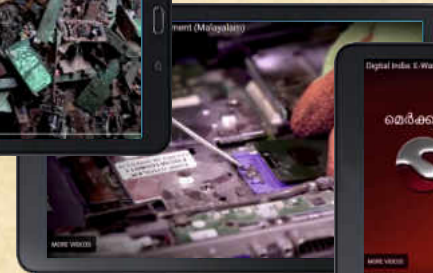
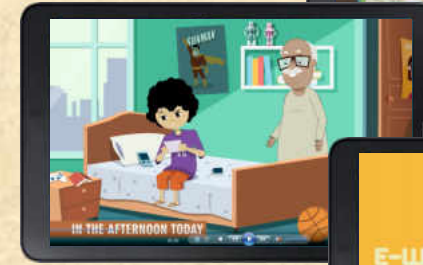


## WEBSITE

[www.greene.gov.in](http://www.greene.gov.in)



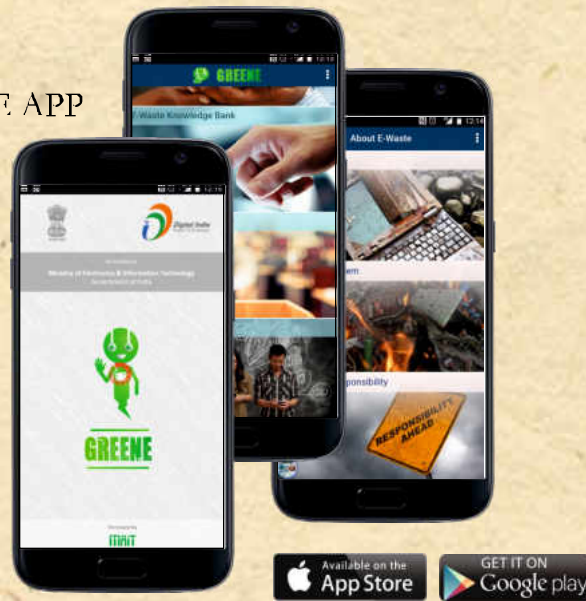
## FILMS







## MOBILE APP



## SOCIAL MEDIA



Social presence in the world of online technology is imperative in today's age where social media tools are universally accessible through mobile phones.

As India's teeming population embraces the phone technology, it becomes imperative to reach out to the key stakeholders through every tool of social media to create awareness about E waste, its widespread and long lasting hazards on the environment and the safe practices to adopt and imbibe to conserve our environment.





## E-WASTE AWARENESS CAMPAIGN

### Need for the Programme

Conceived by the Ministry of Electronics and Information Technology, the aim of the awareness programme is to garner efforts towards educating people about the environmental hazards of E waste if disposed in an unsafe manner. The project has been initiated in 10 cities as a pilot in its first year of implementation. The 10 cities include Bhubaneswar, Guwahati, Imphal, Indore, Kolkata, Moradabad, Panjim, Patna, Puducherry and Ranchi. The characteristics of each city ensures that learning in the first year of the project is noted and its success can be replicated in a phased manner in other cities in the coming 4 years.

### Plan Of Action

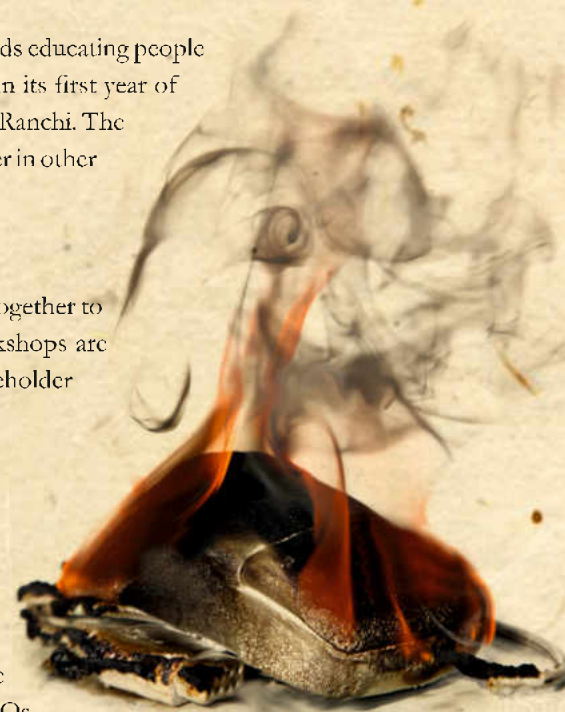
The awareness programme is being jointly conducted by the associations NASSCOM, MATI and CEAMA. The agencies have come together to design the implementation of the programme on the basis of the stakeholders and have ensured a number of activities and workshops are conducted to reach out to the intended stakeholders. At the end of the first year, the project aims to reach 54,000 people across all stakeholder groups who will be aware on how E waste should be managed and disposed.

During the planning phase, the partners decided it was imperative to understand the behaviour of each city prior to customizing the activities. Hence, stakeholder consultation workshops were conducted across these cities to ensure participants could decide the tools to be used to send the right message across to the native population in order to make them aware and act accordingly.

### Impact

A total of 27 activities and workshops were planned in the selected cities across 8 stakeholder groups. The subjects and activities of the workshops were decided by the city in the stakeholder consultation workshops. The implementing partners have chosen renowned NGOs in each city who have prior experience of working in E-waste and waste as a sector. They also have the appropriate reach across stakeholders to be able to create the required outreach for the project.

In the initial phase, the relevant municipality, the state environment department, the state industry departments and institutions, both educational and business have come forward and expressed their willingness to be a part of the programme. Civil society has agreed across all these cities to play a major role in creating the required outreach to the target stakeholders and achieve the numbers as have been targeted in the project.







## E-WASTE TRAINING PROGRAMME ON CAPACITY BUILDING OF GOVERNMENT EMPLOYEES

### Capacity Building

To widen the reach of the awareness programme, National Institute for Electronics and Information Technology (NIELIT) has initiated a project for capacity building of government officials on E-waste management. Under the program, trained and certified NIELIT officials are conducting training programmes in 10 selected states of duration 1, 3 or 5 days. The training ensures the channelization of E-waste generated in these departments according to E-waste Management Rules, 2016.

Via this program under the gambit of 'Digital India' about 2270 government employees panning the targeted 10 states across India were trained. The objective of this training was to prepare and develop E-waste Master Trainers.

### Feedback from participants

- There was a low response from the authorized recyclers if the volume of E-waste is less.
- A need for increase in the number of authorized collection centres and their details to be updated and publicized regularly was highlighted.
- Need for strengthening of the State Municipal Corporations for collection and recycling of E-waste.
- Recyclers/ Collection Centres were not keen in cases involving unbranded electronics items.
- Need for development of a “ready reckoner” for handling and disposal of E-waste.
- Disposal of E-waste following proper procedure should be promoted through print/AV/ social media.
- Procurement process of electronic equipment should include a 'buy back' policy so that obsolete electronics equipment can be disposed in a proper manner.
- Need for proper awareness communication via a display banner in department/ institutions informing that 'Electronic Equipment in this office is disposed as per E-waste Management Rules, 2016'.

### Impact

The training program had an encouraging and positive impact in terms of awareness building in different states which led to issuance of public notices by pollution boards and health departments, drafting of E-waste auction policies and setting up of inventory centres.



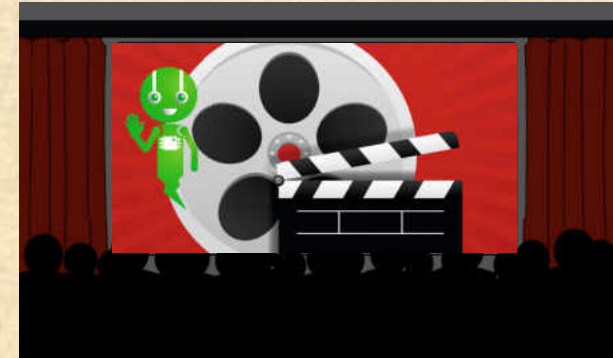
Training of NIELIT Master Trainers  
in progress at NIELIT Delhi Centre



## MASS AWARENESS CAMPAIGN THROUGH CINEMA

Under this umbrella programme, a Mass Awareness Campaign through Cinema is initiated by the PIIID Chamber of Commerce. This campaign aims to reach out to a vast majority of people to educate them about the health implications of improper disposal of E-waste and effective ways to manage E-waste. The campaign targeted:

- Approx 350 Cities in 10 selected states
- 815 Theatres (350 with more than 500 occupancy and 465 with less than 500)
- 60% occupancy totalling 4.4 Crores population



### Impact

The Audio Visual campaign film was showcased in about 800 plus theatres across India.

- The cinema campaign was strategically media planned to include major big banner releases of super stars with a mass appeal and fan following.
- 45 day cinema campaign garnered to reach about approx 5.8 crore viewers. We also managed to support from corporates as a part of their EPR responsibility.
- Encouraging and positive feedback was received from the viewers in respect of our E-waste awareness message being well received and understood.



# INVENTORY ASSESSMENT

## INVENTORY STUDY OVERVIEW

The inventory study was conducted in Assam, Bihar, Manipur, Goa, Madhya Pradesh, Puducherry, West Bengal, Odisha, Uttar Pradesh and Jharkhand to quantify the amount of E-waste generated in these states. The agencies carried out an extensive field study covering approximately 13,500 households and institutions in 80 cities of the ten states to get estimates for E-waste generated in the states. Alongside data on practices followed by the consumers while disposing E-waste was also collected and analysed. The inflow and outflow channels of E-waste were traced to get a fair estimate of the E-waste in these states.

### Methodology

The standard approach involved using the input and obsolescence method to collect data and estimate the quantum of E-waste that has been generated. Furthermore, secondary data was collected to understand the quantities that were placed in the market so that a fair estimation of the quantum of E-waste could be arrived based on the obsolescence rate of different products.

### Data of E-waste generation in 10 selected states

States	2017 (Tons)
Uttar Pradesh	740000
Jharkhand	50000
Orissa	1300
West Bengal	6000
Assam	5100
Bihar	25840
Manipur	2550
Goa	2510
MP	29540
Puducherry	2590







## DELIVERABLES

Quantities of E-waste generated annually have been categorized in the following:

### Product Wise

(IT, AC, Refrigerator, Washing Machines, Mobile phones, etc)

### User Wise

(Households and Commercial Users)

### Product Wise obsolescence ages in households and institutions

Difference in obsolescence rates by type of users

- Households: Socio-Economic Classification A, B and C
- Institutional Users: Government offices, Manufacturing Industry, Services organizations

Level of Awareness among household and institutional users

Most Common methods of Disposal

- Through second hand markets/exchange schemes, through scrap dealers etc.
- Difference in behaviour by different types of users

Most important considerations or expectations while disposal

- Price, environment safety etc.
- Difference in behaviour by different types of user

Understanding of the channel structure

Trade practices

- Economics, value addition at each level of channel (price realization), profitability of stakeholders, level of technology, capacities etc.

Estimation of channel breadth/formal/informal at each level

- Number of scrap collectors, aggregators and segregators, processors

Identification of market mechanisms

Geographical assessment of key pockets in the cities involved in E-waste handling or trade or processing

Projection of E-waste quantities for next 5 years

Estimates of quantity of E-waste generation have been projected till 2021. Validation of the above calculated E-quantities has been done by interviews with trade channel members. A multi-stakeholder committee comprising officials from MOEFCC, SPCB and other relevant government department will be constituted to review the progress and validate the results of the project.





## CAMPAIGN - IMPLEMENTATION & IMPACT

### STAKEHOLDER WISE IMPACT AND CHALLENGES

Under MeitY's "Awareness Program on Environmental Hazards of E-waste", awareness workshops were designed and conducted to reach out to all relevant stakeholders who are integral members of our E-waste ecosystem i.e RWAs/Localities, Schools/Colleges, Bulk Consumers (including corporate & Govt. sectors), Informal Sector, Dealers, Refurbishers and Manufacturers. This program was designed to target key 10 cities viz. Bhubaneswar, Guwahati, Imphal, Indore, Kolkata, Moradabad, Panjim, Patna, Puducherry and Ranchi.

MAIT, NASSCOM Foundation and CEAMA drove the program campaign and managed to reach an encouraging total of

**1,23,000**

people across all stakeholders in the targeted cities.

Despite certain challenges and impediments, the program managed to accomplish desired impact envisaged during the planning stage and also brought to light certain learnings which would help refining similar future activities.







## A) RWA AND LOCALITIES

Keeping with the awareness programs objective of reaching out to the citizens of India, MeitY garnered to educate about 40000 participants during this drive by organizing interactive workshops and activities amongst the strong social communities consisting of RWA and localities.



Ranchi



Imphal



Panjim



Kolkata





## B) SCHOOLS AND COLLEGES

Part of the program design was to catch the young to inculcate best possible habits right from their very first brush with technology and electronic equipment. This awareness drive involved workshops and participative activities and enlightened close to 67,000 young college and school going students, who are not just the largest share of technology users in the country but also the future.

### Impact

The awareness program catalyzed formation of Eco Clubs in colleges in Kolkata and Patna to channelize E-waste and also lead to similar clubs in five schools setting up a system involving E-waste collection points.

### Challenges

The program saw challenges in the form of convincing schools towards participation as these activities were being conducted during summer vacations.



Bhubaneswar



Guwahati



Panjim



Patna





Kolkata



Guwahati



Ranchi







## C) DEALERS

The dealer stakeholders not just make up the largest sellers of EEE but also hold potential to serve as the largest collectors of WEEE from individual consumers in India. It cannot be argued that reaching out to them effectively can ensure the WEEE flows back into the formal chain enabling it to be recycled in an environmentally sound manner. Through this awareness campaign targeting this vital stakeholder community, MeitY managed to reach close to 3500 participants.

### Challenges

Due to a lack of conceptual awareness regarding E-waste, the dealers showed low levels of interest to participate in the program. The summer heat also resulted in a low turnout.

- There was practically no authorized E-waste recycling unit or a proper collection center in the 11 eastern and north-eastern states.
- The absence of such units in these states posed as an obstacle in mobilizing a focused drive for collection of E-waste. Due to this, for all disposal requirements the bulk consumers need to depend on recyclers operating in distant states.
- Even if any authorized recycler expressed desired to accept disposal responsibilities, there were difficulties and uncertainty regarding fixing of prices of E waste, transportation costs, document preparation and formalities for interstate transfers.
- Hence, the E waste was being sent for dismantling and recycling to the informal sector due to their assuring a higher price and fewer formalities in comparison to those offered by authorized recyclers.







## D) BULK CONSUMERS

Institutions like corporate houses, research institutes, media houses etc. that rely heavily on technology and technological equipment for their businesses are the largest user of EEE in the country. Awareness amongst this stakeholder becomes vital as they would account for about 75% of all WEEE to be recycled in an environmentally sound manner. MeitY succeeded to involve about 5500 participants during the awareness drive amongst this strong group of stakeholders.

### Impact

- The awareness building activities lead to STPI, Ranchi and Coal India to conduct successful E-waste awareness campaigns under Swachh Bharat Pakhwada and to setting up of a small E-waste recycling unit.
- On the behest of Corporation of the city of Panaji and Goa Waste Management Corporation a program has been initiated to help develop their E-waste collection architecture.
- TCS and IISBC have expressed their desire for E-waste awareness programs being conducted in their offices in Kolkata.
- The Hon'ble Minister of Science and Technology, Assam, Shri Keshab Mahanta has asked AMTRON and ENVIRON to submit a proposal for setting up an E-waste recycling unit in Guwahati.
- The Assam state government appreciated the initiative and the Dy. Commissioner, Kamrup – Rural, Govt. of Assam extended his support by assuring MeitY about the initiative being taken forward and establishing collection centers in the state.
- Ministry of IT, Govt. of Manipur created a draft E-waste policy for the state with help of inputs from the program's presentation.







- State Pollution Control Board (SPCB) Kolkata assured to reach the masses for creating awareness on the subject of E-waste. They also displayed support to plan setting up more collection centers in the city and evaluate the Public Private Partnership (PPP) model. Patna and Indore also witnessed similar support from SPCB.
- Department of Science & Technology shared that they were conducting ongoing projects in awareness building and expressed their interest in extending the overall program to a higher level.

### Challenges

The government of Patna expressed their intent to conduct a similar awareness drive on a large-scale format, which was delayed due to the political upheaval in the state. Hence they held back the Bulk Consumer program in interest of a larger scaled drive at a future date. However, an NGO conducted a door to door campaign and sensitized around 10 bulk consumers (banks, computer centres, hospitals etc.).

There was also a challenge in terms of companies not finding value proposition to support events due to them not falling under the purview of CSR 2%.







## E) REFURBISHERS

MeitY accomplished to educate about 3360 participants amongst this group of stakeholders who generate a lot of E-waste being involved in the process of extracting maximum life from consumable electronic devices.

### Impact

The program catalysed the creation of a much needed database of refurbishers (computer repair shops) in each of the cities targeted.

### Challenges

Under the current Rules, Mobile and computer repair shops which do the maximum amount of refurbishing are not considered as refurbishers. Furthermore, their availability for participation in workshops poses a challenge as it interferes with their daily work. However, approaching and interacting with them as a group from an activity stand point would help the program.



Door to door Sensitisation with Refurbisher, Guwahati



Workshop - Refurbisher,  
Ranchi







## F) MANUFACTURERS

MeirY achieved connecting with about 1212 participants amongst this group of stakeholders, which are the most important stakeholders as far as the E-waste rules, 2016 are concerned. The program warranted that these manufactures are given a mandate ensuring collection of E-waste on the products/devices attaining end of life. 7 workshops were conducted among 6 targeted cities which had a major presence of manufacturers' i.e Bhubaneswar, Kolkata, Panjim, Patna, Puducherry and Ranchi. There was no presence of Manufacturers in the cities of Moradabad, Ranchi, Guwahati, Indore and Imphal.

### Impact

During the program there was a pertinent realization towards a need of more capacity building to understand the E-waste rules.

During the program development of EPR plans came about in Bhubaneswar, Kolkata, Panjim and Patna. A need for assistance towards developing EPR plans and in understanding E-waste returns filing procedures were highlighted in Puducherry and Ranchi.

### Challenges

Certain cities did not have formally registered electronics manufacturers and many of the registered ones were located outside the city areas which led to their inability to attend the program.





## G) INFORMAL SECTOR

MeitY propelled the informal sector awareness campaign and conducted 22 workshops in the targeted 10 cities to influence 3070 participants amongst this group of stakeholders. These key stakeholders comprises of the local 'kabadi' who are involved in collecting all forms of waste with value for recycling purpose and workers who recycle e-waste using unscientific methods and processes.

### Impact

- In Bhubaneswar Informal actors have expressed willingness to form cooperatives which can collect and channelize E-waste to recyclers and have requested for help in its formalization. They have further requested for continued effort from the government to create outreach and advocacy in other areas in the city where E-waste is collected.
- Guwahati witnessed Informal actors requesting government assistance to enable infrastructure for entire North East so that they can formalize livelihoods.
- Informal actors in Indore and Puducherry have expressed willingness to form cooperatives and apply for recycler's authorization with the pollution control board. They also pointed out that availability of land from the state government would help them formalize their livelihoods.
- Informal actors from Panjim, Kolkata, Patna, Ranchi, have expressed willingness to formalize to gain access to technology developed by MeitY and also requested assistance from MAIT in the formalization process.
- Moradabad witnessed 10 informal sector actors expressing willingness to formalize and also witnessed 2 cooperatives being formed and RO, UP State Pollution Control Board (UPSPCB) application formalities initiated.
- In Bhojpur, where more than 700 informal actors participated, more than 10 have expressed willingness to formalize to access technology developed by MeitY.







- M.P. Vigyan Sabha has helped in the integration of informal sector groups and an authorized recycler for safe disposal of E-waste
- SPCB Moradabad informed that they would also be creating awareness among the informal sector to minimize the threat of environmental and human health degradation. The Mayor of Moradabad assured to run a campaign on E-waste in the city, which has already been initiated.
- NGOs have been getting repeated requests from stakeholders to conduct similar programs.

#### Challenges:

- The informal actors being spread out across varied demographic classifications posed as a challenge towards formalization. A need for a sustained effort to move large informal actors towards formalization was observed.
- Wide variations in participation numbers were noticed amongst the chosen cities; In Moradabad, E waste is the primary livelihood, while in Panjim there are hardly any E waste collectors.
- It was also seen that NGOs in these cities lacked the experience of working with the informal sector on the subject of E waste.
- Limited or no mobilization support extended from the municipalities in Kolkata, Ranchi, Indore, Patna and Guwahati.
- Political upheaval in Pondicherry, Bihar and elections across UP, Patna, Panjim, Assam, and Manipur posed as a challenge.
- Extreme heat in Moradabad; Floods in Manipur, Assam, Bihar also posed as a hindrance.
- There were some delays due to the final content being provided late to the lead agency. Furthermore, partners have cited unavailability of content in Hindi or any other respective State's vernacular languages.



Collection Drive launched by  
Shri. Ranbir Singh, Principal Secy  
Envt & Forest- Panjim,  
Shri. Dharmendra Sharma  
Chief Secy - Govt. of Goa





- In most cities, the ecosystem around E-waste management is at a nascent – nonexistent stage. Moreover, a holistic view around collection and improving waste management architecture was missing. In most cities, the ecosystem around E-waste management is at a nascent stage. Besides, a holistic view around collection and improving waste management architecture was missing.
- There was an overall lack of clarity in the New Rules regarding setting up of collection centers and funding of the EPR program, which have made it challenging for the NGOs who otherwise were instrumental in integrating the informal sector and channelizing E-waste.
- Price dynamics tend to make the informal sector try to fetch as high a price as they can get. Hence setting up of authorized registered recycling units may not ensure proper E waste management, unless and until the bulk of the E-waste is channelized from the informal sector to the authorized sector. This process of channelization was almost absent all over India and therefore progress achieved in safe E waste management was negligible.

#### **Feedback from City Task Force Members and stakeholders.**

The programs were well received by the City Task Force in each of cities where most of them have actively participated in the held sessions. However, concerns about the program continuity and sustainability of the initiative have been raised by the City Administration & Task Force.







## LEARNINGS AND SUGGESTIONS:

- At present trading and recycling of E-waste is entirely dependent upon the informal sector and they have a large network and access of collection of E-waste.
- Livelihood of large number of informal workers is depending upon E-waste. If an authorized collection centre has to run successfully, it has to tie up with these informal collectors. So the key lies in the authorized collection centres tying up with these informal collectors and arranging collection with business viability.
- These collection centres could develop network with the informal collectors to ensure a successful collection system. It is to be understood that informal dismantling and recycling cannot be stopped just by policing and coercion. Solution towards achieving a smooth switchover lies in de-linking the chain connecting informal collectors and informal dismantlers / recyclers and connecting them with the authorized collection centres.
- If attention is paid towards the issue of business viability of channelization, different ways and means can be probed. This would further ensure stakeholders working on these issues to suggest several methods towards ensuring channelization.
- It was observed that there is a need for the producers of electric and electronic equipment under Extended Producer Responsibility (EPR) or Corporate Social Responsibility (CSR) to support this cause for the authorized collection centres to run with economic viability. The middle level collectors must be motivated and supported to channelize their collection of E-waste to the authorized recyclers.

One of the major learning which came to light was that a sustained effort is needed to move large informal actors towards formalization along with capacity building to help meet targets as prescribed in the rules. Technology, land and infrastructure are key requirements for the project's success. The advocacy and outreach is just an initiation, more follow up actions and handholding is required for developing EPR plans and internal policies on E-waste. Mobilizing these key action areas is instrumental to take the awareness levels to the required stage and get the desired positive impact.











## AWARENESS CAMPAIGN PROJECT: STAKEHOLDER WISE ACHIEVEMENT AT A GLANCE

### WORKSHOPS & ACTIVITIES CONDUCTED



Capacity Building of Government Employees.

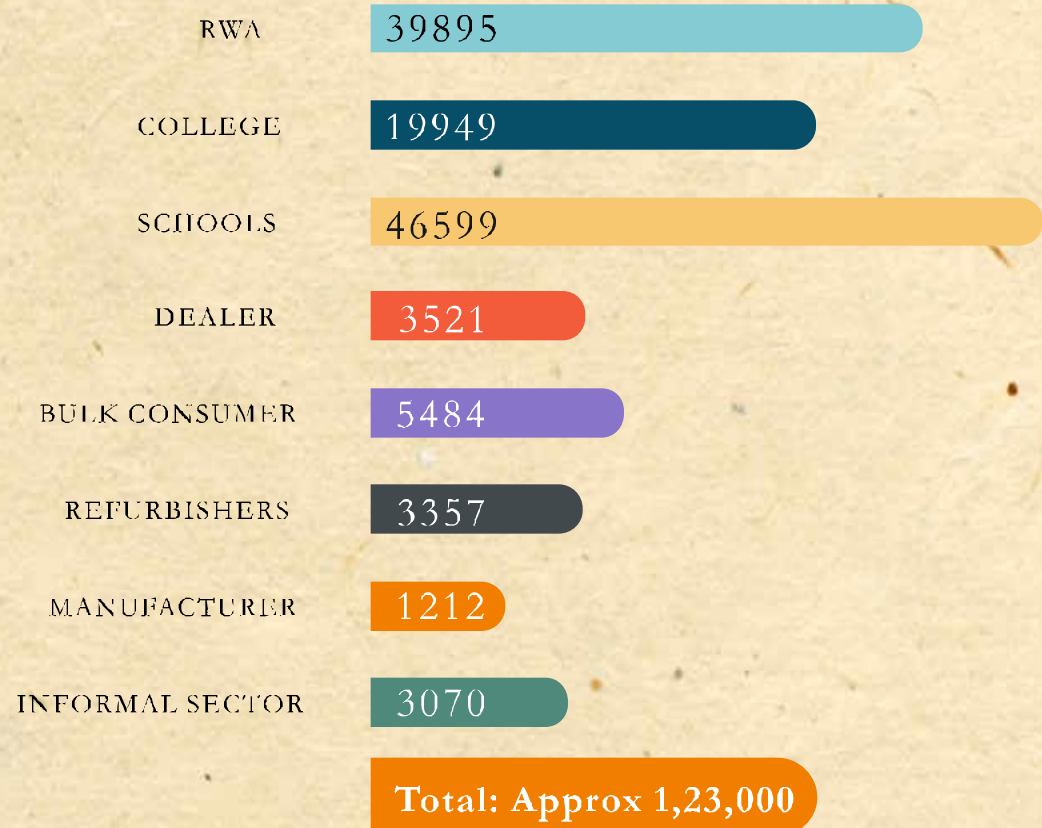
**2270** employees trained



Cinema Campaign in **800** plus theaters.

Approx **5.8** Crore viewers and  
the campaign was run for **45** days.

### STAKEHOLDER WISE NUMBERS ACHIEVED















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