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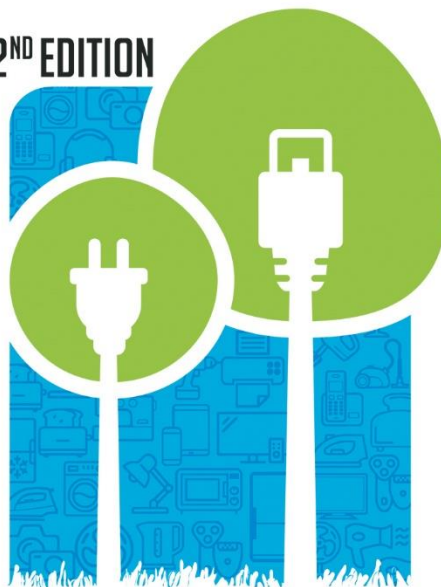
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2<sup>ND</sup> EDITION



# E-WASTE MANAGEMENT IN INDIA CIRCULAR ECONOMY

A VIRTUAL CONFERENCE  
25 August 2021 | 1100 - 1700 hrs.  
Digital Platform

## A REPORT

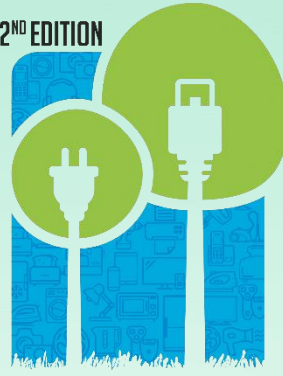
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*Virtual Conference on*  
**E-Waste Management in India: Circular Economy**  
**25<sup>th</sup> August 2021: Digital Platform**

## Index

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## **E-WASTE MANAGEMENT IN INDIA: CIRCULAR ECONOMY** **25<sup>th</sup> August 2021 | Cisco Webex Digital Platform**

### **REPORT**

The Confederation of Indian Industry (CII) organized the second edition of 'E-Waste Management in India: Circular Economy' on 25th August 2021 over Webex digital platform.

The event was supported by the Ministry of Electronics & Information Technology (MeitY); Ministry of Environment, Forest and Climate Change; Digital India and GreenE. The event was also supported by Consumer Electronics and Appliances Manufacturers Association (CEAMA), Industrial Waste Management Association (IWMA), Manufacturers' Association for Information Technology (MAIT) and Material Recycling Association of India (MRAI) and have CII-ITC Centre of Excellence for Sustainable Development & GreenCo as Knowledge Partners.

E-waste collection, transportation, processing, and recycling is dominated by the informal sector. The sector is well networked and unregulated. Often, all the materials and value that could be potentially recovered is not achieved. In addition, there are serious issues regarding leakages of toxins into the environment and workers' safety and health. This provides an opportunity for experts and technology innovators to play a key role by bringing innovative solutions in addressing the concerns and thereby opening avenues for new businesses.

India is now officially the world's third-biggest e-waste generator, producing over 3.23 million metric tonnes of e-waste per year, behind the US and China. India's e-waste generation has risen nearly 43 per cent between FY18 and FY20. The pandemic-induced increase in use of electronic devices is set to accentuate this problem in future.

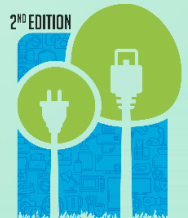


India currently ranks among the bottom 10 out of 180 countries on the Environmental Performance Index 2018 as per the World Economic Forum 2018. The first regulations to manage e-waste in India were introduced in 2011. They came into effect in 2012. The e-waste rules have been amended twice since, in 2016 and 2018. While the 2012 regulations mandated takebacks, they did not mandate any target or provide incentives. The changes brought in 2016 provided more regulatory certainty by specifying gradual and increasingly stricter collection targets. The latest changes brought in 2018 revised collection targets under EPR by 10 per cent every year until 2023. Thereafter, the target has been made 70 per cent of the quantity of e-waste generated.

The objective of the conference was to bring all sensitising experts related to this sector together to explore new business opportunities for the Indian Industry and Circular Economy.

Few takeaways from the conference:

- Bring in simpler regulatory processes, so that re-furbishing supplies can be controlled in times of crisis and certainty about device availability can be established
- Customer looking for any refurbished products, may opt for a refurbished unit rather than a brand-new system.
- Healthcare needs manufacturers thinking in terms of healthcare resiliency and sustainability, not just in terms of profitability.
- In the longer term, device manufacturers ought to work on designing devices that can be re-used, upgraded perhaps under a legal framework with patient safety focus.
- Generate 25% of our revenue from circular products, services, and solutions.
- OEMs to be allowed to import refurbished / upgraded Medical equipment with approval from MOH under MDR 2017.
- Very important to drive the message of circular economy in India, moving away from the concept of waste.
- Need all stake holders for driving full-fledged circular economy in India.
- 3<sup>rd</sup> party can be allowed to work for OEMs with clear demonstration to compliance to standards and original specifications of OEMs.
- The producers are required to have arrangements with authorised dismantlers/recyclers either individually or collectively or through a Producer Responsibility Organisation (PRO) as mentioned in their EPR Plan approved by Central Pollution Control Board (CPCB) and enclosed in their EPR Authorisation (EPRA)
- A single platform for SPCBs and CPCBs to interchange the information in a more transparent manner.
- Recycling commodities from secondary ores (e-Waste) is the only sustainable way forward
- Waste reduction, minimize environmental impact and enhanced life cycle of EEE products



- Promotion of Green Manufacturing in EEE i.e. manufacturing products using secondary raw materials will reduce CO<sub>2</sub> emissions and protect Earth biosphere
- Boost existing recycling sector & investment in collection & recycling technology
- EPR Processing and Statutory filing activities must be digitized
- Creating policy frameworks for adoption of standards and certifications for industry led refurbishment and recycling
- Complex materials in e-waste need to be segregated for potential non-usable and re-usable items. Non-usables to be recycled and re-usables to be refurbished
- Skills and capacities at local level to facilitate refurbishment solutions
- Need to focus on Investment in R&D
- Regulations need to be reviewed at regular intervals, and make it according to the changing times
- To create traceability, accountability, and transparency into the system to ensure better results and trust in the system
- India to lead a different approach towards Circular Economy
- To encourage use of re-furbished products, include these in Government Tenders
- Right to repair Policy to enhance life of electronics
- Industrial Parks at State level for Recycling Industry
- Bring in advance technologies for the Recycling Industry in India
- Collective effort is required for enhancing awareness amongst stakeholders. Include E-Waste Management in curriculum at school levels
- Circular Economy to be included while making government policies for this sector

The unique conference attracted participation of around 450 delegates from India and overseas. The delegates raised their concerns and queries during the sessions and some of them were:

- Is there mechanism in place by the authorized e waste recyclers to buy e waste from local kabadi vendors, as they get it as part of their plastics and metal waste. This happens, obviously because there is not much awareness with consumers about proper disposal of e waste.
- If we will have our e-waste - what is justification for IMPORT OF WASTE. The developed world wants to get rid of their dirty waste and pass it on to countries like India.
- Do you think auction sites/auction for E-waste a good way in recycling space?
- Can standardization of rates for material be possible?
- Software makes big problem for reuse, the operating systems / many applications are not supporting for old working products. This will force working machine not usable. Is there any policy or can you put your views on?
- Is there any conditions s how much a recycler can refurbish? regulatory limits.





- While some of the products are made obsolete, even services and availability of spares are made dearer intentionally. How this will be addressed in the regulations and acts.
- Can Government enforce design standardization of electric/electronic accessories, so as to use across different products, for example why do we need to buy or dispose a charger with each phone/laptop of different brands, which probably is a substantial contributor to e-waste?
- How solar panels are going to be recycled in the long run?
- Is there a way to rate the quality of recycle that is done by the many recyclers in the business? Some of them are extracting metals partially and discarding the rest as (non-saleable) waste. As India evolves, it is important to look at the performance and effectiveness of the recycling process?
- there are more than 12/13 types of polymers used in manufacturing of electronics. without segregating the different types of plastic recycling is not possible. how processor are doing it
- We would like to understand the legal stature of the CPC's guidelines on Environmental Compensation Charges? Would any non-compliance under the E-waste Rules be dealt under the EPA or would it be considered under the ECC guidelines?
- What are the key laws that a recycler should be aware of and be compliant with, especially for battery waste?
- What is the way forward for India?
- As a technology provider in the circular economy sector, our largest challenge is in the supply of raw materials, which is managed by the informal sector or middlemen. Is there a plan to build supply chain infrastructure that propels our capabilities in recycling to world class levels?
- How has been penalty to violators for past 3 years
- Are there any plans to standardize the rates of various e-waste items from the side of govt.? If yes, by what time they will be come into execution?
- Based on the categorization showed, lithium ion batteries from laptops and mobile phones are part of e-waste. But EV batteries are not covered by this. The recycling process is however not very different. Can someone calrify how recyclers need to take care of this?
- E waste containing hazardous material is also to be dealt with as per hazardous waste?
- what are the actions being planned to improve the recycling from 20% upwards?
- Is there a plan to create a marketplace / mandi for e-waste? It can bring all buyers and sellers of e-waste together and reduce the role of informal economy.
- How about the possibilities and opportunities for becoming an Agent between local e-waste collectors and recyclers just without any storage place ? what all legal requirement should we need for that ?
- What is the status of DRS scheme as of now? What is the efficiency level at the implementation stage? How effective it is in India?

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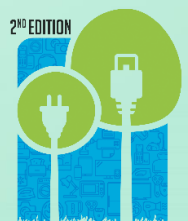
E-WASTE MANAGEMENT IN INDIA  
CIRCULAR ECONOMY



Key speakers have shared their thoughts and gave inputs on policy initiatives for the E-Waste Management in India:

- CPCB has developed an online management system, which will be operational from September, 2021.
- Effective management in E-waste is important to help in achieving goals of Circular Economy. We lack in general awareness about e waste management. Increase in awareness among people/consumers will lead to increase collection and recycling products, which will help in achieving Circular Economy goal for the country.
- Reduce the impact of E-waste on Environment and health. MoEFCC made rules and policies implemented by years and support of Industry and CII is required.
- Recycle should be a norm particularly for E-waste
- MeitY has come up with policy paper mentioning various policy tools in the best practices for enabling Circular Economy in the electronics and electrical sector.
- Adopting Circular Economy in the electronic production will ultimately result in environment of livelihood, enhancement in the quality of life, and sustainable assets to the resources and it will be good for the humanity as a whole.
- E-Waste is rich sources of Secondary Raw Materials (SRM), which can contribute towards resource security & environmental sustainability
- Circular Economy approach to E-waste management plays an Important role in resource efficiency, reduction in pollution & waste, longer product-life, recovery of precious and rare materials. Minimization of occupational and health hazards also boost recycling industry, helps formalization and job creation.
- There is separate need for investment in R&D. We cannot depend on Reverse technology or buying technology from outside. We need to develop something on our own also.
- How do we make finance available for this – Recycling, infrastructure, etc
- How do you create traceability, accountability and transparency that is a key for trying to build trust in the system
- Device which can be invasive to healthcare means it is invasive for patients, we can use refurbish device for it. Need to review our thought process here.

The Conference closed with a mutual consensus amongst all stakeholders that E-Waste Management is a National Issue in India and there is an urgent need to work together to ensure sustainable solutions for future. Stakeholders from Government has assured full support to this sector and suggested that industry and relevant associations to work together and seek government intervention, wherever required.



# Glimpses of Conference

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**INAUGURAL SESSION**  
1100 – 1147 HRS



**Mr. Nirmod Kumar**  
Director  
Ministry of Environment, Forest and Climate Change  
Government of India



**Mr. Anand Kumar**  
Additional Director  
Central Pollution Control Board (CPCB)  
Government of India



**Mr. Ved Prakash Mishra**  
Director  
Hazardous Substance Management Division  
Ministry of Environment, Forest and Climate Change  
Government of India



**Dr. P Parthasarathy**  
Member  
CI National Committee on Environment and  
Managing Director  
E-Parisaraa Private Limited

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**SESSION 1: 1200 – 1305 HRS**

**REGULATIONS, CHALLENGES, AWARENESS &  
IMPLEMENTATION**



**Mr. Anand Kumar**  
Additional Director  
Central Pollution Control Board (CPCB)  
Government of India



**Mr. Tabrez Ahmad**  
Group Director  
Dell Technologies



**Mr. Nandan Mall**  
Founder & CMD  
Hulladek Recycling



**Mr. Balbir Bora**  
Chief Executive Officer  
Vincular Testing Lab India Pvt Ltd

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**SESSION 2: 1310 – 1432 HRS**

**REFURBISHMENT AND RECYCLING ALONG WITH  
PRODUCT LIFETIME:  
CHALLENGE, ROBUST MECHANISM**



**Mr. Ved Prakash Mishra**  
Director  
Hazardous Substance Management Division  
Ministry of Environment, Forest and Climate Change  
Government of India



**Dr. Rachna Arora**  
Team Leader | European Union – Resource Efficiency  
Initiative (EU-REI), India  
Team Leader Circular Economy Solutions to Prevent  
Marine Litter (CES), Deutsche Gesellschaft für  
Internationale Zusammenarbeit (GIZ) GmbH



**Mr. Mohd. Umar Farooq**  
Co-Founder, Plant Head & CTO  
World Scrap Recycling Solutions Pvt. Ltd.



**Mr. Hari Prasad Shetty**  
Chief Business Officer – Recycling &  
Refurbishing Division  
Cerebra Integrated Technologies Ltd



**Mr. Abhishek Agashe**  
Senior Manager, Head (E-waste & EPR)  
Recykal (Rapidue Technologies Pvt Ltd)

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25 August 2021 | 11:00 - 17:00 hrs.  
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**SESSION 3 : 1435 – 1554 HRS**  
**CIRCULAR ECONOMY ON E-WASTE SECTOR**



**Dr. Sandip Chatterjee**  
Director  
Ministry of Electronics & Information  
Technology (MeitY)  
Government of India



**Mr. George Paul**  
Chief Executive Officer  
Manufacturers' Association for Information  
Technology (MAIT)



**Dr. Ashok Kumar**  
Vice Chairman  
Greenscape Eco Management  
Pvt. Ltd



**Ms. Ritu Ghosh**  
Chairperson  
CEAMA Waste Management Council and  
Associate Director, Corporate Affairs &  
CSR – Panasonic India



**Mr. Corey E Dehmey**  
Executive Director  
SERI, USA

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25 August 2021 | 11:00 - 17:00 hrs.  
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**SESSION 4 : 1557 – 1700 HRS**  
**NEW INITIATIVES AND WAY FORWARD**



**Dr. Sandip Chatterjee**  
Director  
Ministry of Electronics & Information  
Technology (MeitY)  
Government of India



**Mr. Anand Kumar**  
Additional Director  
Central Pollution Control Board (CPCB)  
Government of India



**Mr. Satish Sinha**  
Associate Director  
Toxics Link



**Mr. A.L.N. Rao**  
Chief Executive Officer  
Exigo Recycling, India



**Mr. Sudhakar Mairpadi**  
Head, Regulatory, Govt Affairs (Health  
Systems, Personal health)  
Philips India Ltd

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AK	TA
NB	DP
CD	CD
Anand Kumar	Tabrez Ahmad
neelam bhagat	Dr P Parthasarathy
CII Trade Fairs Departmen	CII Trade Fairs Departmen
<b>E-Waste Management Status</b>	
Terminology	Description
E-Waste Generation	<b>1014961.213 tonne (2019-20)</b> Note: based on the sales data of 21 type of equipment.
Number EPR Authorisation granted	<b>1804( As on date)</b>
Registered PROs	<b>57 (As on date)</b>
Number of Authorized Dismantler / Recycler under e-waste rules	<b>400 Processing Capacity -1068542.72 tonnes</b>
E-Waste collected and processed in FY 17 -18, FY 18-19 & FY 19-20	<b>69413.619, 164663.00 and 2,22,436.34 tonnes</b>



# Glimpses of Conference

AA  
Abhishek Agashe

HS  
hariprasad shetty

RA  
RACHNA ARORA

CD  
CIL Trade Fairs Department

MF  
Mohd Ferooq

## Need for Circularity of Products and Materials

**ANTHROPOCENE**

Humans have become the single most influential species on the planet

Carbon dioxide emissions, global warming, ocean acidification, habitat destruction, extinction and **widescale natural resource extraction** are all signs that we have significantly modified our planet.

**IPCC's recent report stated**  
It is **'code red'** for humanity  
Human activity has **'unequivocally'** changed earth's climate

**INCREASING DEMAND**

Billions of new consumers wanting to reap the benefits of technology in their daily lives will enter the market in the next few years.

With a primary focus on IT (Laptops, tablets), Communication (smartphones) and consumer electronics (TV, REF, WM, AC)

**3 billion** new customers will enter the market in next **20 years**

**PRICE SENSITIVITY**

Increasing competition in the marketplace and E-commerce are democratizing 'choice' for the consumers.

Leading to high price sensitivity, low brand loyalty and limited appetite for higher prices solely based on environmental / social benefits

**Difficult to persuade** consumers to spend on features that are environmentally and socially favourable

+15

DC  
Dr Sandip Chatterjee

G  
georgepaul.ed

NB  
neelam bhagat

RA  
RACHNA ARORA

CD  
CIL Trade Fairs Department

## Circular Economy – Life-cycle Approach

+15

DK  
Dr. Ashok Kumar

DC  
Dr Sandip Chatterjee

G  
georgepaul.ed

CD  
CIL Trade Fairs Department

NB  
neelam bhagat

**E-waste is growing Rapidly**

**Global E-waste Generation (in Million MT)**

Country	E-waste (in Million MT)
China	7.2
US	6.3
Japan	2.1
India	2.0
Germany	1.9
UK	1.6
Brazil	1.5
France	1.4
Sustainable Production	1.4

**India's e-Waste Generation (in Million MT)**

State	E-waste (in Million MT)
Andhra Pradesh	100
Karnataka	90
Gujarat	80
Maharashtra	70
Tamil Nadu	60
West Bengal	50
Kerala	40
Punjab	30

E-waste generated worldwide : **53 Million metric Tonnes** valued at **approx 60 Billion USD** is projected to rise to **5119 Billion USD** by 2027

Globally only 20% of e-Waste is collected & recycled properly vs shortages of materials across the globe, automobile sector facing serious challenges due to unavailability of semiconductors.

E-Waste generated in India in 2018 was **2 Million metric Tonnes** & 2020-21 e-Waste generation will be over **3 million Tonnes**

E-waste is estimated to grow at a **CAGR of 14.1%** (2020-2027) globally

Source: global e-waste monitor & allied market research, Pollution Control Board

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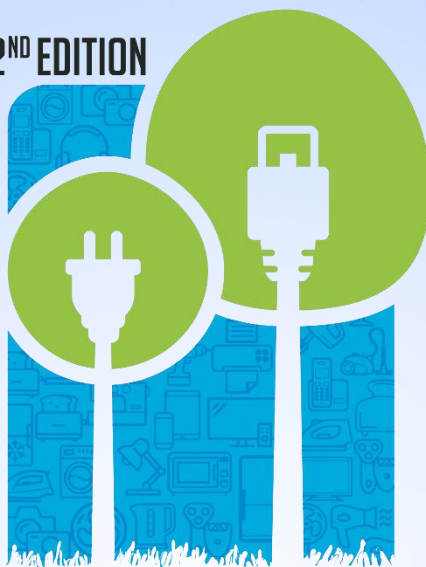
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## PROGRAMME

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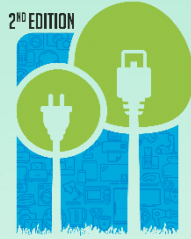
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**25<sup>th</sup> August 2021: Digital Platform**

<b>Inaugural Program : 1100 – 1147 hrs</b>		
1100 - 1110 hrs	Opening Remarks and Current Scenario	<b>Dr. P Parthasarathy</b> Member CII National Committee on Environment and Managing Director E-Parisaraa Private Limited
1110 - 1120 hrs	Address	<b>Mr. Ved Prakash Mishra</b> Director Hazardous Substance Management Division Ministry of Environment, Forest and Climate Change Government of India
1120 - 1130 hrs	Address	<b>Mr. Anand Kumar</b> Additional Director Central Pollution Control Board (CPCB) Government of India
1130 - 1145 hrs	Address	<b>Mr. Nirmod Kumar</b> Director Ministry of Electronics and Information Technology Government of India
1145 - 1147 hrs	Vote of Thanks	<b>Dr. P Parthasarathy</b>
1147 hrs	End of Session	
1147 - 1200 hrs	Session Break	



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**E-Waste Management in India: Circular Economy**  
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**Session 1: 1200 – 1305 hrs**

**Regulations, Challenges-Awareness & Implementation**

1200 - 1203 hrs	Opening Remarks	<b>Mr. Tabrez Ahmad</b> Group Director Dell Technologies
1203 - 1223 hrs	Rules and Implementation	<b>Mr. Anand Kumar</b> Additional Director Central Pollution Control Board (CPCB) Government of India
1223 - 1238 hrs	Address	<b>Mr. Nandan Mall</b> Founder & CMD Hulladek Recycling
1238 - 1253 hrs	Address	<b>Mr. Balbir Bora</b> Chief Executive Officer Vincular Testing Lab India Pvt Ltd
1253 – 1303 hrs	Question & Answers	
1303 - 1305 hrs	Vote of Thanks	<b>Mr. Tabrez Ahmad</b>
1305 hrs	End of Session	
1305 -1310 hrs	Session Break	



*Virtual Conference on*  
**E-Waste Management in India: Circular Economy**  
**25<sup>th</sup> August 2021: Digital Platform**

<b>Session 2: 1310 – 1432 hrs</b> <b>Refurbishment and Recycling along with Product lifetime:  Challenge, Robust Mechanism</b>		
1310 - 1327 hrs	Opening Remarks & Address	<b>Dr. Rachna Arora</b> Team Leader   European Union – Resource Efficiency Initiative (EU – REI), India Team Leader Circular Economy Solutions to Prevent Marine Litter (CES Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
1327 - 1342 hrs	Address	<b>Mr. Mohd. Umar Farookh</b> Director World Scrap Recycling Solutions Pvt. Ltd.
1342 - 1357 hrs	The journey to green economy: The importance of 4 I's	<b>Mr. Hariprasad Shetty</b> Chief Business Officer – Recycling & Refurbishing Division Cerebra Integrated Technologies Limited
1357 - 1412 hrs	Role of Refurbishing and Recycling in Circular Economy	<b>Mr. Abhishek Agashe</b> Senior Manager, Head (E-waste & EPR) Recykal (Rapidue Technologies Pvt Ltd)
1412 - 1422 hrs	Policy and Government Initiatives in E-Waste Recycling	<b>Mr. Ved Prakash Mishra</b> Director Hazardous Substance Management Division Ministry of Environment, Forest and Climate Change Government of India
1422 - 1430 hrs	Question & Answers	
1430 - 1432 hrs	Vote of Thanks	<b>Dr. Rachna Arora</b>
1432 hrs	End of Session	





*Virtual Conference on*  
**E-Waste Management in India: Circular Economy**  
**25<sup>th</sup> August 2021: Digital Platform**

**Session 3: 1435 – 1554 hrs**

**Circular Economy on E-Waste sector**

1435 - 1450 hrs	Opening Remarks and Address Circular Economy in E-waste	<b>Dr. Sandip Chatterjee</b> Director Ministry of Electronics & Information Technology (MeitY) Government of India
1450 - 1505 hrs	Address	<b>Mr. George Paul</b> Chief Executive Officer Manufacturers' Association for Information Technology (MAIT)
1505 - 1520 hrs	E-waste driving the Circular Revolution	<b>Dr. Ashok Kumar</b> Vice Chairman Greenscape Eco Management Pvt. Ltd
1520 - 1535 hrs	Address	<b>Ms. Ritu Ghosh</b> Chairperson CEAMA Waste Management Council and Associate Director, Corporate Affairs & CSR – Panasonic India
1535 - 1542 hrs	Thinking Beyond E-Waste Management for Electronics Sustainability	<b>Mr. Corey E Dehmey</b> Executive Director SERI, USA
1542 - 1552 hrs	Question & Answers	
1552 - 1554 hrs	Vote of Thanks	<b>Dr. Sandip Chatterjee</b>
1554 hrs	End of Session	
1554 - 1557 hrs	Session Break	



*Virtual Conference on*  
**E-Waste Management in India: Circular Economy**  
**25<sup>th</sup> August 2021: Digital Platform**

<b>Session 4 : 1557 – 1700 hrs</b> <b>New Initiatives and Way Forward</b>		
1557 - 1600 hrs	Opening Remarks	<b>Mr. Satish Sinha</b> Associate Director Toxics Link
1600 - 1615 hrs	The New challenges, Initiatives and Way Forward	<b>Mr. A.L.N. Rao</b> Chief Executive Officer Exigo Recycling, India
1615 - 1627 hrs	Circular Economy: Way Forward in Medical device Industry	<b>Mr. Sudhakar Mairpadi</b> Head, Regulatory, Govt Affairs (Health Systems, Personal health) Philips India Ltd
1627 - 1639 hrs	Address	<b>Dr. Sandip Chatterjee</b> Director Ministry of Electronics & Information Technology (MeitY) Government of India
1639 - 1651 hrs	Address	<b>Mr. Anand Kumar</b> Additional Director Central Pollution Control Board (CPCB) Government of India
1651 - 1658 hrs	Question & Answers	
1658 - 1700 hrs	Vote of Thanks	<b>Mr. Satish Sinha</b>
1700 hrs	End of Conference	

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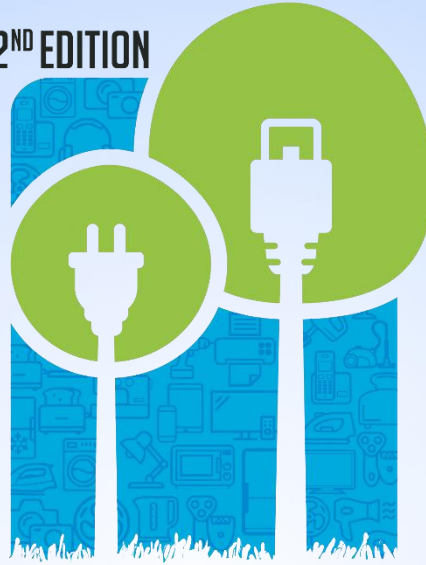
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# E-WASTE MANAGEMENT IN INDIA CIRCULAR ECONOMY

A VIRTUAL CONFERENCE  
25 August 2021 | 1100 - 1700 hrs.  
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## SPEAKER'S PROFILE

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## Dr. Sandip Chatterjee

Director

Ministry of Electronics & Information Technology (MeitY)  
Government of India

Dr. Sandip Chatterjee, Scientist, Director & Head of the Department of Electronics Materials & Component Development Division, Ministry of Electronics and Information Technology, Government of India, is engaged in implementing R&D projects on electronics material, components.

2. He is Master in Science (Physics) from University of Calcutta and Doctorate from University of Delhi, India for successful completion of research work on the materials of rare earth oxides and rare earth oxysulfide phosphors from National Physical Laboratory, New Delhi, India. Phosphor, luminescent material applied in display devices like picture tube, flat panel, fluorescent tube, x-ray intensifier screen were his interest area.

3. He is the nodal officer in the Ministry for developing Recycling technologies of Electronic Waste management and successfully completed 7 projects till technology demonstration stages. His work has been recognised and thereby received President's award from Former Hon'ble President of India in 2014. He had published more than 100 research articles in peered review journals, 2 patents and 5 books from international publishers, viz., "Electronics waste management: an India perspective" by international publisher Lambert academic publishing co, Germany and a chapter on "Sustainable Recycling Technology for Electronic Waste", of the book "Sustainability in the Mineral and Energy Sectors", published by CRC Press, Taylor & Francis, USA, September 8, 2016 & also another chapter "Sustainable electronic waste management in India", Sandip Chatterjee, in upcoming volume entitled Paradigm Shift in E-waste Management: Vision for Future to be published by CRC Press CRC Press, Taylor & Francis, USA shortly in 2021.

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4. Dr. Chatterjee has also rich working experience in electronic component industry, a colour picture-manufacturing company, during 1995-2000 at M/s. JCT Electronics, Vadodara, Gujarat. Design, R&D, new product development, indigenization, process improvements etc. were his prime responsibility.

5. He is, presently, engaged in creating Centre of Excellences (CoEs) on emerging areas for creating ecosystem of indigenously developed technologies for Indian manufacturers. Few CoEs including rechargeable battery, e-waste recycling technology, Li-ion based mobile accessories, programmable photonic integrated circuits & systems, also on additive manufacturing sectors including optoelectronics components, medical devices and National centre for Additive Manufacturing have so far been established.

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**Mr. Nirmod Kumar**  
Director

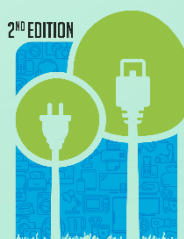
Ministry of Electronics & Information Technology (MeitY)  
Government of India

Shri Nirmod Kumar is working in Ministry of Electronics & Information Technology, Government of India as Director since March, 2021. Before joining this Ministry, he was working in North Central Railway, Jhansi as Sr. DSTE/Co./JHS. He is IRSSE, Batch: 2006.

In his current role at the Ministry of Electronics and Information Technology, he is responsible for attracting Electronic Manufacturing Clusters Scheme (EMC) into the country.

He completed his PGDM (Finance) from National Institute of Management Faridabad, and B.E (Electronics & Communication) from MMMEC Gorakhpur.

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## Mr. Ved Prakash Mishra

Director

Hazardous Substance Management Division  
Ministry of Environment, Forest and Climate Change  
Government of India

He belongs to Amethi, UP. He is an officer of Indian Revenue Service 2004 batch. Before that he was in Indian Audit and Accounts Department. Has worked at various capacities in Income Tax Department in various stations like Nagpur, Jabalpur and Delhi. He has worked in the fields of Assessment of Corporates, Data Analytics, Human Resource etc. in the IT Department. Now he is posted as Director in Hazardous Substance Management Division, Ministry of Environment, Forest & Climate Change, looking after Chemicals, Waste Management, Export Import etc. He was also attached to Department of Pharmaceuticals for Covid Management.

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**Mr. Anand Kumar**  
Additional Director  
Central Pollution Control Board (CPCB)  
Government of India

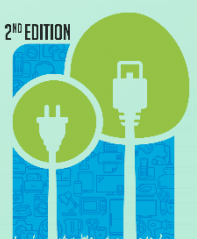
Shri Anand Kumar, Additional Director in CPCB is an environmental professional with more than 25 years of experience in the field of Environmental Planning, Management, Enforcement including Environmental Policies formulation. He has extensive international exposure in the field of E-Waste Management and Environmental Planning.

Shri Anand Kumar has done PG Diploma in Environmental Economics from University of Hyderabad, Master in Environmental Planning from SPA Delhi and B. Tech in Civil Engineering from NIT Patna (Formerly BCE Patna) and is presently heading the WM -III Division of CPCB.

He formulated Action Plan for implementation and enforcement of E-waste (Management) Rules, 2016. He contributed significantly in the formulation of E-waste (Management) Rules 2016, E-waste (Management & Handling) Rules 2011 and road map of E-waste management in the country.

He was involved in the formulation & development of implementation guidelines for implementation of E waste rules including specific guidelines on Extended Producer Responsibility (EPR), Storage, transportation, collection centres, refurbishing, dismantling and recycling of e-waste, guidelines for bulk consumers and guidelines for PRO.

He was involved in the development of guidelines for recycling of hazardous waste and other waste. He contributed significantly in the development of concepts for siting of industries and industrial estates in the country with the help of geographical information system (GIS). He has vast experience in use of GIS in the field of environmental planning and management.







## Dr. P. Parthasarathy

Member

CII National Committee on Environment and  
Managing Director  
E-Parisaraa Private Limited

P. Parthasarathy is a B.Tech., from A.C. College of Technology, University of Madras -1977 and M.S. in Chemical Engineering from IIT in Chennai - 1981 and Ph.D in Earth Science and Resource Management, Department of Applied Geology, Kuvempu University, Karnataka -2010. The Ph.D thesis “Ecologically Efficient Resource Recovery of Electronic Waste for Indian Conditions” was published by ‘Lambert Academic Publishing’, Germany. He has about 34 years experience in the field of precious metals coating, recovery and refining with about 15 years in recycling of Electronic Waste with a few papers and several national and international presentations in these fields.

Presently, Founder and Managing Director of E-Parisaraa Pvt. Ltd., located at Dobaspet which is 50km from Bangalore. Started during 2004 for Electronic Waste Management for first time in India with low cost, cleaner technologies and to implement 3R best practices. E-Parisaraa is engaged mainly in resource recovery of metals, plastics and glass in an environmental friendly way from E-waste. E-Parisaraa is certified ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, R2:2013 & CII Greenco Gold Certified Company. Also founder and CEO of Surface Chem Finishers, specialist in Electro Plating of Precious Metals since 1995, engaged in Recovery of Precious Metals from E-waste.

### Significant Awards and Recognition:

- National Award – 2017, Winner of 7th National Award for Technology Innovation in Petrochemicals & Downstream Plastics Processing Industry, by Ministry of Chemicals & Fertilizers, Department of Chemicals & Petrochemicals, Gol, instituted by CIPET.



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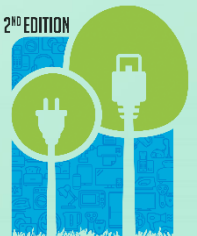


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- National Award - 2010 Outstanding entrepreneurship - First Prize by The Ministry of MSME, from Her Excellency, The President of India, Dr. Mrs. Pratiba Devisingh Patil at New Delhi.
- 3R Excellence Award for E-waste Recyclers 2018 by Ministry of Housing & Urban Affairs, Government of India.
- CII-ITC Sustainability Award 2010, “Certificate of Commendation” for Significant achievement on the journey towards Sustainable Development for the first time for a Micro Business Organizations.
- “Innovative MSME Project Award” from the Hon’ble Union Minister Padma Vibhushan, Shri Pranab Mukherjee by SIDBI.
- “Glory of India Award” and Certificate of Excellence in Friendship Banquet in Bangkok- 2011.

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**Mr. Tabrez Ahmad**  
Group Director  
Dell Technologies

Tabrez Ahmad is Group Director at Dell Technologies. He has over 25 years of diverse experience in legal practice, business development and public policy in India, China and America.

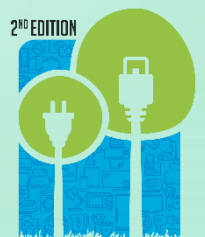
Prior to Dell, Tabrez worked at multiple organizations, most notably AB InBev, Flipkart, eBay, OPPI, FICCI, George Washington University, Reed Elsevier and Microsoft. At FICCI, he has promoted Indian tech industries in US, Japan, UK, Germany, France, Sweden, Latvia, Saudi Arabia, UAE, Oman, and ASEAN countries with federal ministries, Government of India.

He did pro bono for the Partnership for Safe Medicine, assisted multiple artisan groups/micro enterprises and counselled on protection of women rights in Louisiana and Washington DC.

Tabrez chairs public policy and start up committees of the Indian National Bar Association and environment committee of the MAIT.

He did EMIT from IIFT, MCA from Bharat University, LLM from George Washington University and courses in Artificial Intelligence, Internet of Things and Blockchain from MIT Sloan School of Management.

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**Mr. Balbir Bora**  
Chief Executive Officer  
Vincular Testing Lab India Pvt Ltd

Balbir Bora is a leader in product compliances industry with over 25 years of global exposure. He has lead product compliance at Cisco for eight years in the region and spent nine years in IT project management at some of the leading corporations. He has been a serial entrepreneur and setup and lead successfully multiple ventures in the field of Telecom regulatory compliances, product homologation and testing.

Balbir has special interest in the public policy matters like waste management and have been associated in promoting it at various levels. He has lead many initiatives at different forums for environment protection and waste management. He had been the mentor to environment support NGO 'Say Trees' and is also a promisor at 'Living My Promise' initiative for upliftment of the society in every way possible.



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**Mr. Nandan Mall**  
Founder & CMD  
Hulladek Recycling

Nandan Mall, Founder & CMD of Hulladek Recycling, is a third-generation entrepreneur. At a very young age, he realized the need for a proper channel for waste management. Therefore, he started his dream project of establishing an e-waste management company to ensure proper collection and channelization of electronic waste to authorized recyclers.

Nandan trained at Indumetal Recycling in Bilbao, Spain for about 2 years, where he trained in e-waste management and recycling processes. He studied processes for extraction of precious metals and salting techniques. Nandan returned to India in 2014 and Hulladek Recycling was conceptualized based on the expertise and knowledge gained from his time abroad.

Nandan completed his schooling from St. James, Kolkata and completed his B. Com (Hons) from St. Xavier's College, Kolkata. He has worked with companies such as Red Bull and NIIT as a Business Development Manager, working and leading groups of people, he sincerely believes:

**“Teamwork is the ability to work together toward a common vision. The ability to direct individual accomplishments toward organizational objectives. It is the fuel that allows common people to attain uncommon results.”**

~ Andrew Carnegie, business magnate and philanthropist





### Dr. Rachna Arora

Team Leader | European Union – Resource Efficiency Initiative  
(EU – REI), India

Team Leader Circular Economy Solutions to Prevent Marine Litter (CES  
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Dr. Rachna Arora is working as a Team Leader in the Resource Efficiency project of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and as a Team Leader on the GIZ Circular Economy solutions preventing Marine litter project. She has been working with GIZ since last 13 years under the bilateral projects, combifinance projects of the European Commission and the partnership projects with the private sector with relevant Ministries and government departments. She has been supporting the Government of India (GoI) on policy formulation and its implementation. She is a TEDx speaker on Circular Economy.

She holds a doctorate degree in environmental chemistry from Indian Institute of Technology (IIT) Roorkee. She was a member of the Inter-departmental committee set up by Niti Aayog (Policy think tank, GoI) on Resource Efficiency strategy and Research and Development (R&D) committee set up by the Ministry of Information Technology and Communication (MeitY), GoI on electronic waste management. She is also a working group member of the FICCI Circular Economy Committee to support industry research and dialogues on Circular Economy.



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**Mr. Mohd. Umar Farookh**  
Director  
World Scrap Recycling Solutions Pvt Ltd.

Mr. Mohammad Umar Farookh, Director of World Scrap Recycling Solutions Pvt Ltd, is a seasoned professional over 15 years of hands-on experience in managing E-Waste effectively and scientifically. He is an active network architect professional thus, enables him to setup state of art E-Waste recycling facilities with advanced technology support such as AI & Machine Learning.

His experience on refurbishing of IT Assets & Precious Metal Recovery from E-Waste Recycling / Battery recycling process is remarkable and it is advancing every year through his research. Also, he is a veteran in designing the machines & process channels for E-Waste recycling setup.

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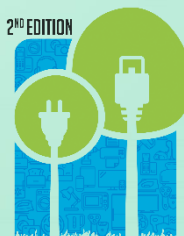
### **Mr. Hariprasad Shetty**

**Chief Business Officer – Recycling & Refurbishing Division  
Cerebra Integrated Technologies Limited**

Mr. Hari Prasad has over 20 years of rich experience with the best of the FMCG, Banking, Telecom/Consumer IT & Sustainability brands in the areas of Sales, Operations & Marketing. He is also an active investor & mentor to start-ups in the domain of Retail and Sustainability.

Currently, he is part of Cerebra Green, India's largest recycler, with the aim of enabling the producers to meet their sustainability goals, enable digitization with affordable digitization solutions, and build world-class remanufacturing facilities.

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### **Mr. Abhishek Agashe**

Senior Manager, Head (E-waste & EPR)  
Recykal (Rapidue Technologies Pvt Ltd)

#### **Education:**

B. Tech (Electronics Engineering – VLSI core elective) - VIT, Pune

MSc Energy Conversion and Management – University of Nottingham (Merit)

#### **Certifications:**

Certified Waste Management Professional – NREP (USA)

Circular Economy – Technische Universiteit Delft

#### **Experience:**

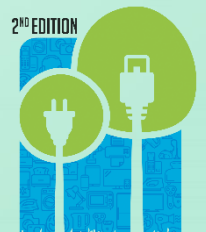
My expertise lies in building scalable and profitable business verticals within the waste management, energy and sustainability domains.

Ex-Founder of waste management start-ups focusing on E-waste, Plastic waste and Food waste segments with successful exits.

I have consulted various private and public limited organizations on implementing sustainable waste management solutions, extended producers' responsibility, critical raw materials recycling and circular economy.

Currently heading the E-waste vertical at Recykal, engaged in building resilient supply channels for effective channelization of material to recyclers and dismantlers using digital technology. I work closely with Producers and Brand Owners to fulfil their Extended Producers Responsibility obligations.

I am a firm believer in using business as an instrument of change and for social inclusion.



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**Mr. George Paul**  
Chief Executive Officer  
Manufacturers' Association for Information Technology (MAIT)

George Paul brings 30 years of industry experience in IT Hardware Products, Electronic Subsystems, Mechatronics, Avionics, Mechanical Engineering, Aerospace & IT Services. He has led operations in the functional domains of Marketing, Corporate Affairs, Public Relations, Manufacturing, Hardware Product Engineering, Training & Capacity Building, Research & Development. As part of the Industry, he was actively involved with MAIT and other industry bodies towards fostering R&D and manufacturing in India. Prior to this role, Mr. Paul was the Executive Vice President of HCL Infosystems. At HCL, he has managed and led a variety of roles in Marketing, Manufacturing & R&D. In his career, he has had stints with leading organizations including Larsen & Toubro, HCL-HP & HCL Peripherals.

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**Dr. Ashok Kumar**  
Vice Chairman  
Greenscape Eco Management Pvt. Ltd

Dr. Kumar is a qualified Chartered Accountant and Company Secretary. He has a vast experience of 40 years in the field of Finance and Corporate Affairs and is currently widely known for his contribution to the emerging e-Waste industry in India. He has worked with various multi-national companies and large scale listed companies and has been instrumental in executing large turn key projects with technical collaboration from Japan, UK and Germany. He is associated with waste management companies and advising on various issues including finance, corporate and corporate governance etc.

Dr. Kumar is Ph.D in Finance. He is currently involved in “Circular Revolution” with one of India's biggest e-Waste recycler -“Greenscape Eco Management”.

He works closely with government agencies and various stakeholders of e-Waste industry in India and has been an active contributor in several awareness events of electronics recycling and secondary raw material extraction including European Union Conference on Electronic waste in 2018. He is a firm believer that circular economy is the only path for a sustainable future. Currently he is a member of Committee for Circular Economy on Electronic waste, constituted by Niti Aayog, New Delhi.

Dr. Ashok Kumar is a Chairman of E-waste Committee, constituted by Material Recycling Association of India (MRAI). MRAI is the Apex National Association representing interests of India's Recycling Industry. MRAI is the voice of Indian Recycling Industry firmly associated with the most regional trade associations having a collective strength of more than 20,000 Micro and MSME members.

Dr Kumar says ' While linear approach works towards reaching the end , circularity works towards creating from the end to begin a new cycle, just like life in nature'.



**E-WASTE MANAGEMENT IN INDIA  
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## Ms. Ritu Ghosh

Chairperson

CEAMA Waste Management Council and  
Associate Director, Corporate Affairs & CSR – Panasonic India

Ritu Ghosh is an 'Information Communication Technology' (ICT) public policy expert with over 24 years of experience. She has been driving initiatives for the adoption of Information Communication Technologies as the transformation tool in emerging and developed economies. The focus has been to reduce cost of access to Information Technology by aligning government policies in the interest of the community.

Currently chairing the environment council at CEAMA, Ritu Ghosh has also been actively engaged with the government on environment sustainable strategies, including the working committee on e-waste, focus group on Circular Economy.

Ritu Ghosh has been instrumental for creating next generation of solutions and models to facilitate the innovation and awareness on technology and its impact. She has worked with leading brands like Panasonic, Vodafone, Hewlett Packard, Sun Microsystems.

She has been a research associate with Indian Institute of Technology (IIT) and was instrumental in setting up the Centre for Excellence in e-Governance at IIT Delhi campus with an objective to carry research activities and showcase the latest technology initiatives and innovation to the government.

She has co-authored papers and articles on affordable healthcare solutions and the role of technology, institutionalizing innovative IT solutions which have been recognized and applauded at Global Platform.



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**Mr. Corey E Dehmey**  
Executive Director  
SERI, USA

Serving as the Executive Director of SERI (Sustainable Electronics Recycling International), a global non-profit organization based in the United States, Corey Dehmey is a champion of building practical solutions toward electronics sustainability, with the goals of protecting the planet and enriching lives around the world. Spanning over 20 years in the electronics industry, Corey's diverse background touches nearly the entire electronics lifecycle, including having worked in IT support, ITAD, data destruction, reverse logistics, reuse, and recycling. It's this wide range of experience that gives Corey a broad view of the electronics sustainability challenge, simultaneously considering the varied perspectives of many stakeholders including the electronics industry, businesses, government, manufacturers, and individual consumers.

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**Mr. Satish Sinha**  
Associate Director  
Toxics Link

He is currently the Associate Director at Toxics Link, a leading environmental group working on issues of waste and chemicals. An active campaigner and advocate for sustainable development. Has made significant contribution towards shaping the current Municipal and E waste rules for India. Has written extensively about Informal sector and its connect with waste and circular economy. Member core team, “Zero Mercury Working Group” Minamata Convention, deeply engaged on changing the landscape of mercury management in India and the region. Visiting faculty at “International Centre for Environment Audit and Sustainable Development” Member of UNEP Advisory Group on mercury.

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**Mr. A.L.N. Rao**  
Chief Executive Officer  
Exigo Recycling, India

Mr. A.L.N. Rao is the Chief Executive Officer of Exigo Recycling, India. As CEO, he plays a significant role in offering end to end solutions to the recycling industry to multiple stake holders.

He is into multiple Recycling verticals in India:-

- Ewaste-consumer durables and electronics, ITAD and Mobility.
- Plastic waste
- Li-ion/Electric Vehicles Battery
- Waste to Energy – Carbonization

He is a sought after speaker, panelist, mentor and advisor in Recycling/Refurbishing/Retail industry, both national and international. He has also authored articles on the industry for various business journals and publications.

He is a core committee member in many associations: -

- Niti Aayog Core Committee Member of “Circular Economy of Li-ion Batteries”, India
- CII – Core member of “Waste to Worth” Task force
- R2 TAC - Sustainable Electronics Recycling International (SERI) – Responsible Recycling (R2 – Global technical advisory committee member)
- MRAI (Material Recycling Association of India) – Ewaste core committee member
- MAIT (Manufacturers association of Information Technology) – special Invitee - Governing Council



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A recipient of many awards for his and his organisations contribution for sustainable livelihood and make the world a better place to live for next generations.

Prior, He held leadership positions in Attero Recycling, Aditya Birla Retail and Videocon group. Three decades+ experience in the Electronics industry in India and Abroad.

A specialist offering solutions in the B2B and B2C space in electronics Refurbishing, Ewaste Recycling & Refining, Plastics, Li-ion /EV battery reuse and recycling solutions.

A Proven change-agent consistently refining and revitalizing Business strategies, introducing innovation, and facilitating solutions & team driven collaborations locally and globally.

Objective of life –

**“Offer valuable service to human mankind that brings in a change and a smile”.**

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### Mr. Sudhakar Mairpadi

Head, Regulatory, Govt Affairs (Health Systems, Personal health)  
Philips India Ltd

Has several senior management roles in Medical Device and Pharma Industry spread across 29 years. Wide experience in Regulatory, Quality Assurance, Compliance in various management roles spearheading across Medical device, Medical Electronics, Pharma industries. Part of govt task forces directly and through Industry bodies with AERB, CDSCO, MOEF, MIETY, BIS, MOEF, MIETY as part of policy advocacy, regulatory changes over two decades.

Currently senior management role at Philips India for Quality & Regulatory leader. Head- Regulatory for Health Care, Personal Health (Consumer Life Style), and Govt Affairs for India and Indian Sub-continent

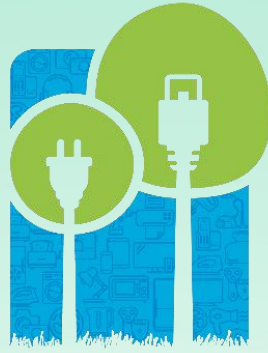
Previous Employers include; Medtronic India Limited, Astra Zeneca Pharma India, Menon Pharma, Anglo French Drug Company, Ajay Drug and Pharma

#### Education:

Post-graduation in Pharmaceutical Chemistry (M. Pharma), MBA in Marketing. Project Management from XLRI ; Lead auditor for ISO 13485-2016, ISO 9000; 2015; OSHAS-18000. Certified for ISO 14179. ISO 14155 standard, Home Care Standard, Post Marketing Surveillance, Environment, Patent. Certified for 21CFR 820; Certified for MDD EU Medical Devices Regulation (MDR 2017/745)

- **Medical Device:** Over 15 years' experience in Regulatory Quality Assurance, Compliance for Medical Devices, Medical Electronics, and personal health sector-manufacturing, design development and market access

- Part of Technical committees at various ministries-AERB, BIS, CDSCO, MIETY, MOEF through Industry associations through CII, FICCI, ASSOCHAM, Advamed, NATHEALTH
- Represented MITA (Industry Association) at Electronic Waste management at United Nations annual conference at Kenya in 2015.
- Part of Medical Device policy shaping at CDSCO over 14 + years
- Expertise in regulations policy in e waste management and environmental safety –Represented UN on sustainability e waste on behalf of Industry Association in 2015,
- Part of technical team at QAI developed home care standards
- Experience in local and global regulations on medical device-part of several policy release over one decade-
- Part of technical committee drafted MDR 2017, Part of technical committees (MHD -15, 18) at BIS reviewing and drafting Medical Device standards
- Expertise in Government policy and advocacy for various ministries-CDSCO, AERB, MIETY, MOEF, PC & PNDT Act (MOH) – Central and state, DGFT, Ministry of Commerce, Ministry of Science and technology
- **Pharma:** Over 14 years' experience in Regulatory, Research and Development, Quality Assurance, compliance, manufacture, exports, merger and acquisition for Pharmaceutical products, cosmetics.
- Experience in regulatory submissions, testing and approvals in India and Indian Subcontinent for Medical Devices, Medical electronics, Consumer Electronics.
- Expertise in Quality management systems, Supplier Quality Management,
- development of standards for medical devices



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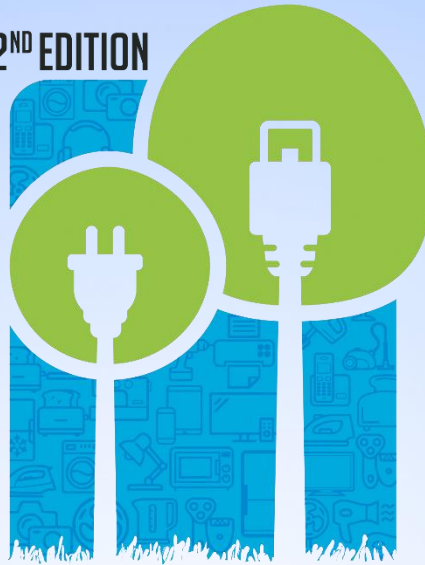
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**Media  
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**Environmental  
Management**

**Health Safety &  
Security**

**General Waste  
Management**



**World Scrap Recycling  
Solutions Pvt Ltd.**

*Global e-waste Management Company*

**Contact Us:**

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Greenscape is at the forefront of the (Electronics industry) circular economy revolution taking place. India's mounting pile of old smart phones, laptops, refrigerators, A/Cs, washing machines etc. is creating a huge problem as it's been largely confined to the informal sector which does not have the skills or resources to deal with this challenge. This problem needs urgent attention at all levels as the eventual price will be paid in terms of deteriorating health of not only the people directly involved with the sector but also the larger population. As this pile is also a huge source of valuable resources for the future generations it needs to be dealt with great care. Greenscape has been successful in providing such commercially viable and scalable solution.

Our business processes bio-mimics nature and promotes cradle to cradle rather than cradle to grave philosophy. Materials re-circulation (Iron, plastics, Copper & rare earth metals) from urban mines such as printed circuit boards, LED TVs, ACs, Ref and washing machines can drive sustainability without compromising technology advancement. Up cycling and making e-Waste an eternal resource of materials is our motto.

We focus on maximizing secondary raw material generation with highest purity index and reducing waste. Our goal is to take utmost care of the most important element in nature, the human element. Electronic waste is the fastest growing waste stream at 50 Million metric tons of generation globally.

Greenscape is a proud committee member of the Circular Economy policy on E-waste constituted by NitiAyog under Prime Minister's initiative on CE and of various material recycling associations across the globe.

Greenscape offers circular solutions that convert e-waste to natural capital while making business sense and creating employment opportunity. Our facilities across India offer recycling solutions for defunct electronic products and regenerate critical elements for circulation in supply chains. Strong reverse logistics capabilities, capable sourcing channels and state of the art recycling technology makes us one of the strongest and largest players in India. Our team works with manufacturers, bulk consumers, institutes and individual consumers to source electronics that are no longer in use and divert their fate from dumping to recycling. We also embrace the informal sector in India and work synergistically with kabadiwalas to ensure maximum channelization is done through our oldest network of scrap dealers.

Our aim is to be committed to 2050 global carbon neutrality goal and promote cautious capitalism while bringing back critical materials to supply chains and lessen our dependency on primary ores. We live by a holistic recycling philosophy which caters to planet, people and economy.

If you would like to be a part of this circular revolution and would like to recycle your gadgets contact us on [info@greenscape-eco.com](mailto:info@greenscape-eco.com) or visit our website @ [www.greenscape-eco.com](http://www.greenscape-eco.com)



YOUR E-WASTE SOLUTIONS EXPERT

Cerebra Integrated Technologies Limited is an ISO 9001, 14001, 45001, ISMS 27001 & R2 certified, Public Limited Company, listed on both National Stock Exchange (NSE) & Bombay Stock Exchange(BSE), that adheres to the strictest of quality control standards in the world with utmost transparency.

We are pioneers in providing eco-friendly, innovative and economic e-waste recycling solutions to create a healthier, digitally inclusive world. Our government authorised e-waste recycling and refurbishing plant is one of the largest in India, and our journey has just begun.

Cerebra is India's largest recycler and has the capability to handle 97000MT of e-waste annually and has got KSPCB (Karnataka State Pollution Control Board) licensing for processing e-waste, recycling, refurbishing and management activities. The first phase of the same has been completed on a 12-acre property, acquired through KIADB at Narasapura, Kolar District. The completely automated plant ensures 100% recycling of all the e-waste with zero landfill commit, supported by a team of over 150 dedicated professionals. Our state-of-the-art de-manufacturing line combines high-tech automation and manual processing methods to sort, dismantle and shred e-waste. Cerebra deploys WEEE recycling processes that are ISO 9001, 14001, OHSAS 45001 & ISMS 27001 certified. Cerebra is also R2 certified, adhering to the highest norm of recycling.

We are one of India's largest recycling and refurbishment company, offering recycling and refurbishing services to major brands. Our solutions reduce e- waste of used, outdated devices, while making affordable technology available to organizations & individuals through our Cerebra Experience Centres (Stores) pan India.

We seek to nurture long-term associations with partners, through reliable, consistent, innovative product solutions & services.

We offer full service E-waste management solutions, including PRO, Recycling, Remanufacturing and Retailing, to every corner of the country.



# EXIGO

ETHICAL | TRANSPARENT | RECYCLING

Green Underwriting  
(EPR)

IT Asset Management

Data Destruction

Witnessed  
Destruction Program

Specialised Data  
Security Services

Recycling & Recovery-  
Consumer  
Durables,IT,Mobility

Pan-India Reverse  
Logistics

Electronic Asset  
Decommissioning



EV/Li-ion  
Battery  
Recycling



Refrigerator  
PUF  
Recycling



Precious  
Metal  
Refining



Solar PV  
Module  
Recycling



Waste To  
Energy



DATA PRIVACY



R2 CERTIFIED



SMART TRACKING



ACCURATE INFORMATION

Exigo Recycling Pvt. Ltd

Corporate Office: B-19,1st & 2nd Floor, Sec-63, Noida-201 309, Uttar Pradesh

E-mail: [sourcing@exigorecycling.com](mailto:sourcing@exigorecycling.com) | W: [www.exigorecycling.com](http://www.exigorecycling.com) | Toll Free No.: 1800 102 5018

In today's world we need to be ecological on all aspects in our life and we Greenwaves provide you with reliable Environmental solutions. A company which is dedicated to minimize the electronic waste along with promotion of efficient waste management, proper education through practical works and conservation. Green Waves, an AP Pollution Control Board authorised Recyclers, works mainly on E-waste management and Zero Waste Management in the states of Andhra Pradesh, Telangana and Goa.

ECO PRODUCTS



**GREENWAVES**  
ENVIRONMENTAL SOLUTIONS

ECO PRODUCTS

As a part of zero waste management we have come up with various eco products like Incense and dhoop sticks, colors from floral waste, artcrafts and decoratives from coconut waste, seed papers, seed pencils, seed pens, Seed Flags from recycled paper, bracelets and bags from marine litter

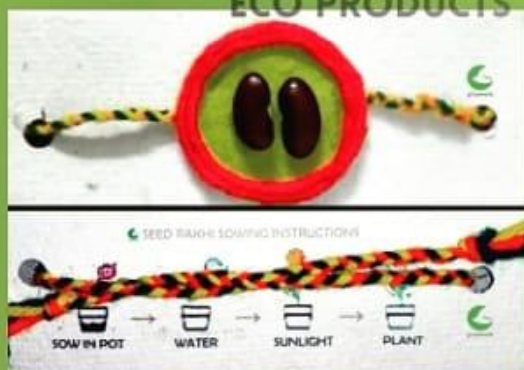
As a part of Biodiversity improvement we are working on a native seed bank, seed balls, Seed Ganesha, Seed Rakhis, plantations also. It is the first of its kind as integration of Waste Management, Wildlife conservation and Water Management by working on eco products and reducing waste outcome and creating awareness on conservation.

+91 70933 51666

[WWW.GREENPAWCONSERVATION.COM](http://WWW.GREENPAWCONSERVATION.COM)



ECO PRODUCTS







## Recykal - Digital waste commerce company for e-waste and plastic

### **About Recykal**

Recykal's unique, integrated approach marks India's first digital waste-commerce (w-commerce) company that connects waste generators with waste processors and recyclers, and brand owners to solve some of the biggest challenges faced by the industry.

We power a Digital Marketplace and provide Smart Centre Solutions for dry recyclable collection centres to ensure e-waste and plastic is recycled properly and efficiently.

We enable transparent and traceable transactions between more stakeholders in the e-waste & plastic recycling ecosystem.

EPRLoop by Recykal provides FMCG and Electronics brands a complete ecosystem to track, trace and fulfil sustainability targets.

Recykal has won accolades from Industry bodies for its work in the waste management, recycling sector

- **The Circulars Accelerator** 2021 by World economic Forum: Only Indian Startup to be selected for the cohort
- **Winner Emerge 50 Awards** 2019 by NASSCOM. Recognized among Most Innovative Software Product Companies in India
- **Indian Circular Economy Awards** 2019 (Startup) by FICCI
- **Best Waste Management Digital Technology Provider** 2019 by ASSOCHAM

With 5 regional offices, Recykal is currently operational in 25+ states, UTs across India. Our digital footprints including mobile, web apps have attracted 500,000 users including consumers, bulk waste generators, aggregators, recyclers and the informal sector. We are working with 100+ Electronic and FMCG companies for their EPR fulfillment. **Panasonic, Samsung, HP, LG, Godrej, Hindustan Unilever, Pepsi Co, Amul, Marico, Pidilite, Johnson & Johnson** are some of the brands we are working with.

### **How we manage E-Waste**

Recykal specializes in digital enabled e-waste collection and channelization. We have built tailor made solutions for consumers, bulk waste generators that enable them to dispose e waste responsibly at the convenience of their doorstep. We also have solutions for aggregators, traders who are dealing with ewastes to sell their material to recyclers, dismantlers for further processing thus closing the material loop and enabling circular economy. The platform supports digital payments, online documentation, logistics support and real time alerts for material tracking.

The digital mapping of transactions gives us complete visibility of material sources across the waste value chain and sets the stage for effective EPR implementation for brands thus giving traceability from collection, channelization to authorized recyclers.

For more details, please visit <https://www.recykal.com>

## ABOUT US:

VINCULAR is a Product Regulatory Consulting organization for global market. We expertise in enabling any product for Indian market access from the product regulatory aspect.

Our team consists of the veterans from the industry with over 200+ years of collective experience in the field of consulting, policy making, risk assessment, standard formulation, public advocacy and managing product compliance. We work as an extended compliance partner and facilitate the fulfilment of regulatory requirements for brands and manufacturers.

Our customer list consist of elite global manufacturers and fortune 500 brands.

## CONTACT US:

- [www.vincular.in](http://www.vincular.in)
- [info@vincular.in](mailto:info@vincular.in)



# VINCULAR OFFERING

**E-WASTE MANAGEMENT  
(CPCB)**



**SAFETY TESTING &  
REGISTRATION (BIS)**



**INDIAN STANDARDS  
INSTITUTION (ISI)**



**ENERGY EFFICIENCY (BEE)**



**LEGAL METROLOGY (LM)**



**TELECOM TESTING  
CERTIFICATION (TEC)**



**WIRELESS APPROVALS  
(WPC)**



**AUTOMOTIVE APPROVALS**



**COSMETIC & MEDICAL  
APPROVALS**



**GLOBAL MARKET ACCESS**







RLG India being a part of global Reverse logistics Group inherits the proven expertise since its inception in 2017. RLG enables its customers to be compliant with legislative and operational requirements related to sustainability and resource efficiency. RLG assists the electrical and electronic equipment producers as a PRO. RLG on behalf of the producers takes the responsibility for collection and channelization of Waste generated from 'end-to-life' of their products including Battery and packaging associated under BWM and PWM Rules respectively to facilitate environmentally sound management of Waste under various rules and regulations implemented and their amendments thereof.

RLG also assists its associated producers in meeting their regulatory obligations relating to Waste channelization's, take back and collection (e.g. achieving collection targets, setting up Collection Centers, implementing take-back mechanisms and conducting awareness campaign, and chemical substance regulations and Environment Management services).

Our Advantages Include:

- Neutral sourcing of logistics and recycling service providers
- Defined Take Back Schemes
- Transparent and legally compliant waste disposal
- IT solutions developed in-house for accurate volume reporting and order management
- Minimization of costs and increase in revenues by bundling the flow of quantities
- Added value offers to improve customer retention
- Awareness and Social intervention
- Toll Free No. and dedicated Website (Toll Free No. 1800-103-1460 and <https://cleantogreen.in/>)

At RLG India our vision is a truly sustainable economy that works without waste, saves resources and is restorative by its circular design. RLG India as a leading Producer Responsibility Organization (PRO) has supported producers to comply with the requirements and duties arising from their extended product responsibility (EPR), including

- Channelization, collection and recycling of e-waste
- Order management and documentation (IT system)
- Clean to Green™ Awareness Drive pan-India, under the aegis of MeitY and Digital India
- Collection Program across cities, and Collection Drives through our robust network of Collection Centers
- Reporting the activities performed to the customers and the authorities.

RLG India, also interacts with Government bodies such as MoEF&CC, CPCB and State Pollution Control Boards to ensure the functionality and compliance of the PRO model in India. It also provides promotion and consultancy on EPR related rules and associated amendments as services to its customers.

RLG business model covers multiple verticals such as Electronic Waste, Plastic Waste & Battery Waste Management.

Electronic waste Management	Plastic waste Management	Battery Waste Management
<ul style="list-style-type: none"> <li>• End to end solution</li> <li>• Compliance Management at various Stakeholders</li> <li>• Collection</li> <li>• Logistics</li> <li>• Recycling</li> <li>• Compliance Report Submission</li> <li>• Down Stream Management</li> </ul>	<ul style="list-style-type: none"> <li>• Organizes and coordinates collection of plastic waste</li> <li>• Organizes transportation of the collected plastic waste to a recycling facility</li> <li>• Coordinates the recycling process</li> <li>• Reports the entire process to the customers and the authorities.</li> </ul>	<ul style="list-style-type: none"> <li>• Policy Advocacy on functionality and compliance listed in BWM Rules 2020</li> <li>• Expand and grow collection network through integrating additional stakeholders.</li> <li>• Ensure auditable documentation.</li> <li>• Ensure order tracking.</li> <li>• Ensure data confidentiality</li> </ul>

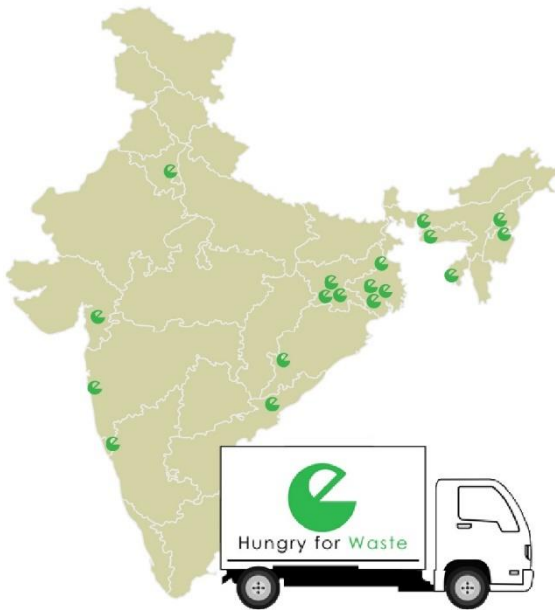
RLG India has received its ISO 9001:14001 certification in December 2019 and stands out as an expert across all dimensions of Waste Management and Take back

# COMPANY PROFILE

## ABOUT HULLADEK

Hulladek Recycling Private Limited is Eastern India's initiative to make this world a greener place by establishing proper channels of waste collection and disposal. Authorized and licensed by the Central Pollution Control Board under the E-Waste Management Rules (2016), we largely function as a Producers Responsibility Organization (PRO) wherein we channelize e-waste from consumers to authorized recyclers on behalf of the producers.

Incorporated in 2015, Hulladek Recycling has successfully recycled over 2 million kgs of electronic and electrical waste from across the country.



we have expanded to 11 states and 17 cities in the country including Mumbai, Bangalore, Delhi, Bardoli and Eastern India.

## CONTACT US

1800-212-7880

help@hulladek.re

www.hulladek.in

**Hulladek**  
Hungry for Waste



our clientele

## SERVICES OFFERED BY HULLADEK RECYCLING:

- Extended Producer Responsibility:**  
We facilitate e-waste and plastic waste recycling and disposal on behalf of producer organizations and assist them by fulfilling their social and environmental responsibilities.
- Collection and Logistics:**  
We pride ourselves for our efficient, well-integrated and transparent logistical practices. We facilitate country-wide pickups through hassle-free, automated and user-friendly processes.
- Data Destruction:**  
We provide both on-site and off-site data destruction services before recycling your e-waste, to ensure your stored information remains confidential and secure.
- Corporate Social Responsibility:**  
Companies having CSR responsibilities can donate their e-waste to Hulladek Recycling. Donating and recycling your e-waste with us is tax-deductible, and can be adjusted in one's CSR targets.
- Recycling and Certification:**  
The mission to recycle the e-waste and work towards a sustainable world is the crux of our business. We also provide certificates to all our clients, who are essentially e-waste generating companies, such as hotels, hospitals etc.

Embedded in the evergreen mantra of Reduce | Re-Use | Recycle, we, at Hulladek strive to manage the electronic and electrical waste of the country. We also work towards building a strong community of responsible, aware and driven citizens who would be our ambassadors of a better tomorrow – who not only respond and participate in our drives and initiatives, but also actively lead waste management campaigns. We strongly believe that the ideal path to a macro-positive change in the future lies in building awareness towards incorporating micro-changes today. Thus, we work as partners, speakers, facilitators and managers for e waste segregation, transportation, collection and disposal.



## Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering Industry, Government and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, with over 9000 members from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 300,000 enterprises from 294 national and regional sectoral industry bodies.

For more than 125 years, CII has been engaged in shaping India's development journey and works proactively on transforming Indian Industry's engagement in national development. CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes. Partnerships with civil society organizations carry forward corporate initiatives for integrated and inclusive development across diverse domains including affirmative action, livelihoods, diversity management, skill development, empowerment of women, and sustainable development, to name a few.

As India marches towards its 75th year of Independence in 2022, CII, with the Theme for 2021-22 as Building India for a New World: Competitiveness, Growth, Sustainability, Technology, rededicates itself to meeting the aspirations of citizens for a morally, economically and technologically advanced country in partnership with the Government, Industry and all stakeholders.

With 62 offices, including 10 Centres of Excellence, in India, and 8 overseas offices in Australia, Egypt, Germany, Indonesia, Singapore, UAE, UK, and USA, as well as institutional partnerships with 394 counterpart organizations in 133 countries, CII serves as a reference point for Indian industry and the international business community.

### Confederation of Indian Industry

The Mantosh Sondhi Centre

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