



**SRI CHINTALAPATI VARA PRASADA MURTHY RAJU**  
GOVERNMENT DEGREE COLLEGE

GANAPAVARAM-534 198

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# SWARNANDHRA- SWACHH ANDHRA

SEMINAR

ON

**IMPACT OF E-WASTE & SUSTAINABLE TECHNOLOGY USE**

**11.04.2025**

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Seminar on

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# IMPACT OF E-WASTE AND SUSTAINABLE TECHNOLOGY USE



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Ganapavaram

11.04.2025

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## What is E-Waste?

Types, Sources, and  
Growing Concern



## Impact of E-Waste

Health Hazards | Environmental  
Damage | Data Security Threats



## Role of Youth & Institutions

Awareness, Action, and Innovation



## Sustainable Technology Practices

Eco-design | Circular Economy  
Green Gadgets



## E-Waste Management Solutions

Reduce, Reuse, Recycle | Urban Mining  
EPR (Extended Producer Responsibility)

# What Is E-Waste?

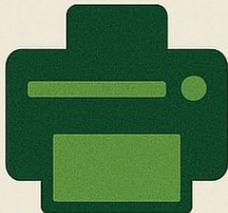
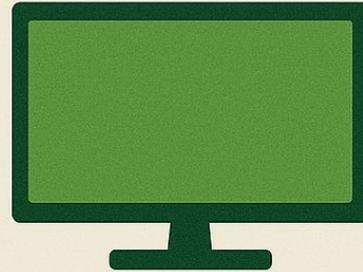
E-waste, or electronic waste, refers to discarded electrical or electronic devices.



smartphone



laptop



printer



printer



gaming controller



washing machine



# AGBOGBLOSHIE-world's largest e-waste dump



# The town of **Baotou**, in China



# THE E-WASTE EVEREST

In 2022, the world generated

# 62 MILLION METRIC TONNES

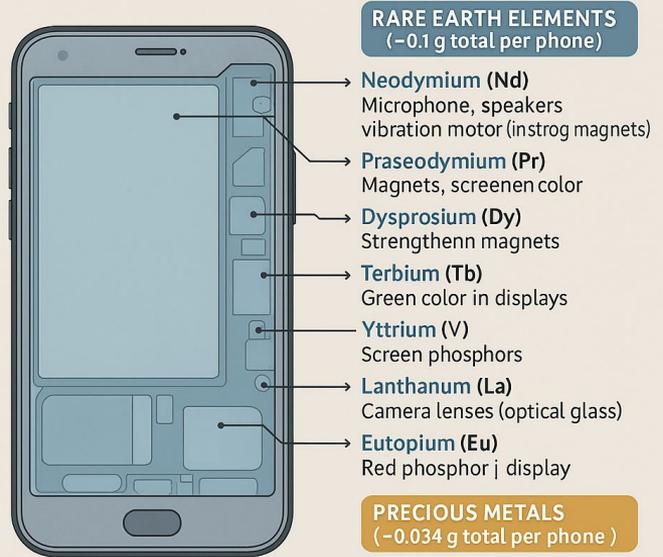
More than 125 Mount Everests  
made entirely of discarded  
phones, laptops,  
TVs, wires, and  
appliances



**20%**

Only about of this mountain is officially recycled.

# METALS & RARE EARTH ELEMENTS IN A TYPICAL SMARTPHONE



## RARE EARTH ELEMENTS (~0.1 g total per phone)

- **Neodymium (Nd)**  
Microphone, speakers  
vibration motor (intrag magnets)
- **Praseodymium (Pr)**  
Magnets, screen color
- **Dysprosium (Dy)**  
Strengthen magnets
- **Terbium (Tb)**  
Green color in displays
- **Yttrium (Y)**  
Screen phosphors
- **Lanthanum (La)**  
Camera lenses (optical glass)
- **Europium (Eu)**  
Red phosphor in display

## PRECIOUS METALS (~0.034 g total per phone)

- **Gold (Au)**  
Connectors, wiring, circuit boards  
(high conductivity)

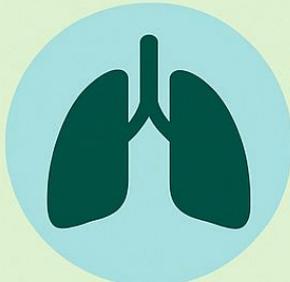
## BASE & HEAVY METALS

- **Copper (Cu)**  
Wiring, circuit boards
- **Aluminum (Al)**  
Phone casing, structural frame
- **Tin (Sn)**  
Solder, circuits
- **Nickel (Ni)**  
Battery electrodes, microphone
- **Silver (Ag)**  
Solder, contacts, switches
- **Palladium (Pd)**  
Solder, capacitors
- **Lithium (Li)**  
Battery (Li-ion)    Trace amounts
- **Cobalt (Co)**    **Iron (Fe)**  
Battery cathode    Internal parts
- **Zinc (Zn)**    **Tantalum (Ta)**  
Circuitry, battery    Phased out  
(modern phones)

# HEALTH HAZARDS OF E-WASTE



## IMPACTS ON HUMAN HEALTH



**RESPIRATORY  
PROBLEMS**



**NERVOUS  
SYSTEM  
DAMAGE**



**IMMUNE  
SYSTEM  
DYSFUNCTION**



**DEVELOPMENTAL  
ISSUES**

# Why Recycle E-Waste?



**Conserves  
Natural Resources**

Reduces the  
need for mining



**Cuts Down  
Carbon Emissions**



**Reduces  
Environmental  
Pollution**

Keeps hazardous  
materials out of  
landfills



**Recovers Valuable Materials**  
Recovers precious metals and rare earths



# IMPACT OF E-WASTE AND SUSTAINABLE TECHNOLOGY USE

Svarnaandhra and Svaachaadhra initiative

11.04.2025



## SUSTAINABLE E-WASTE MANAGEMENT



REDUCE



REUSE



RECYCLE



REPAIR



RESPONSIBLE  
CONSUMPTION

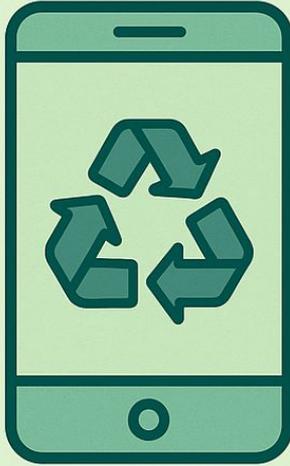


AWARENESS

*Let's manage e-waste wisely for a cleaner planet!*

K.V. Ganesh Kumar, Lecturer in Physics  
S. Ch. V.P.M.R. Govt Degree College, Ganapavaram

# CIRCULAR ECONOMY GREEN GADGETS



**LONG-LASTING  
DESIGN**



**REUSE AND  
REFURBISH**



**RESOURCE  
EFFICIENCY**

# QUIZ on E-WASTE

