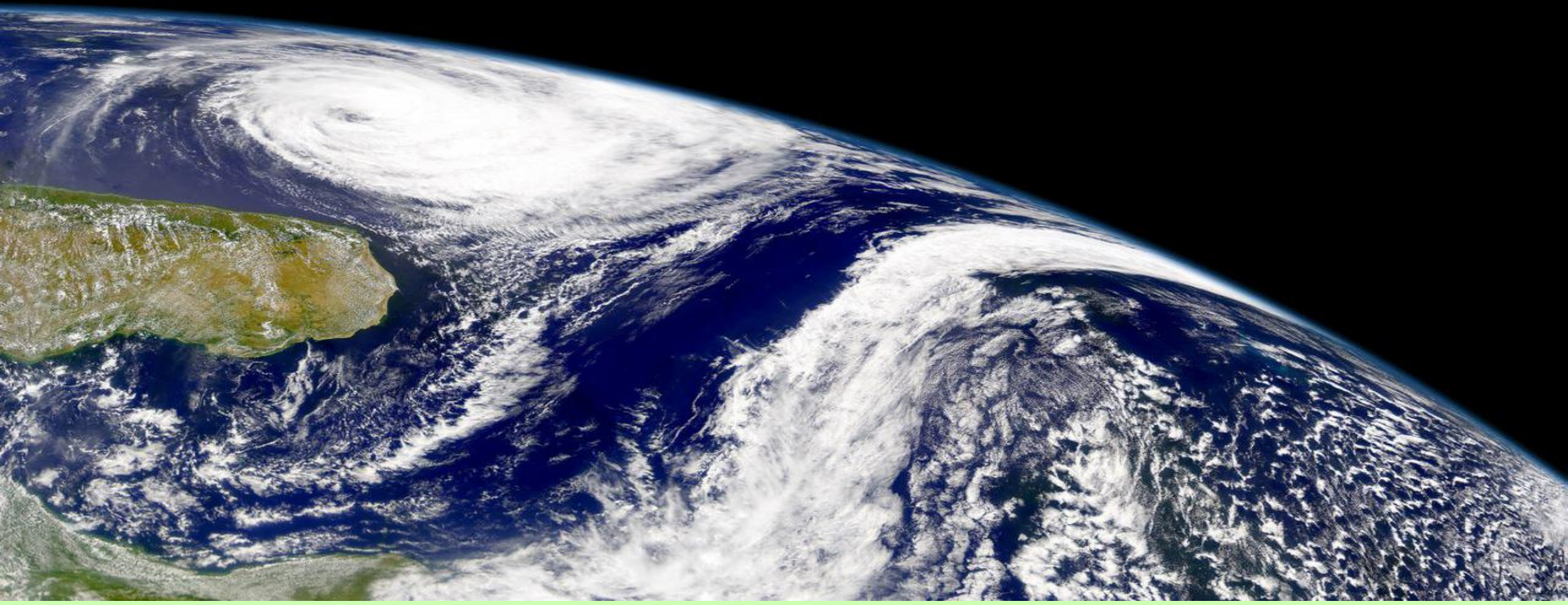


# WASTE RE-ENERGY

WASTE RE-ENERGY



# When there is a Will....



- We are all concerned about our environment, regardless of nationality, race, religion or political disposition.... and we do have reason to worry.
- Waste and pollution threat to the environment and human health is increasing continuously, despite growing environmental awareness.
- Expansive economic growth consumes its toll. Unfortunately, it is often that the environment has to pay the price. The growing amount of “Waste Electrical and Electronic Equipment”, WEEE, is one example of this. Most WEEE goods contain toxic substances which pose a serious threat to the environment and our health.

# There is a way....



- As a result, the demand for stricter environmental legislation and supervision can be heard all over the world. However, the WEEE challenge cannot be solved by legislation alone. We need proper tools, in other words, cutting or rather bleeding-edge environmental technologies.
- Waste Re-Energy's goal is to restore the original meaning of the term "Re-cycling" by creating a global company of sustainable environmental technology. We are here to help enterprises, government and consumers to live up to their responsibilities as good corporate citizens.
- Waste Re-Energy's environmental and economic values can be combined and transformed into a mutually beneficial partnership. That is why we call our technology a win-win-win solution, since all parties benefit.... even the environment.

# What is E-waste?

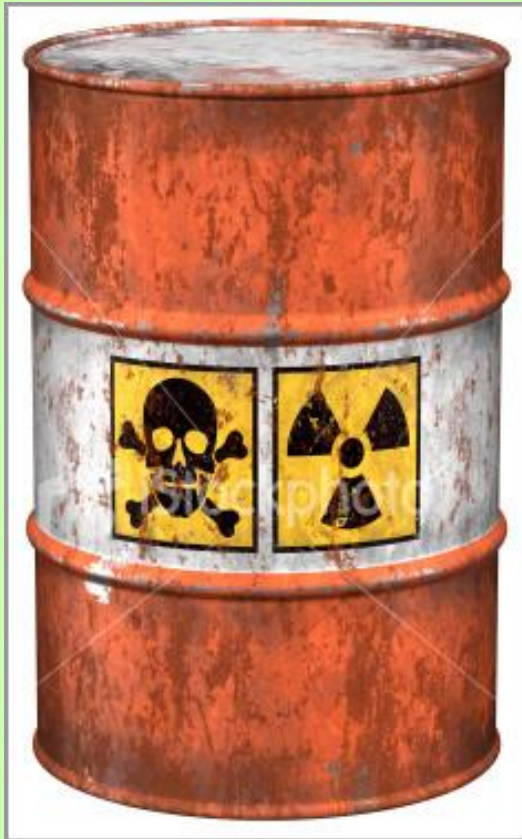


- e-Waste or "Waste Electrical and Electronic Equipment" (WEEE) is defined as a type of waste comprising of any unwanted electrical or electronic appliance.

e-Waste includes:

- Office and communications equipment - e.g. PCs, laptops, servers, networking, printers, fax machines
- Telecom Equipment – including mobile phone and EPBX systems
- Entertainment electronics - e.g. TVs, Hi-Fi, etc.
- Large household appliances - e.g. ovens and refrigerators
- Small electrical appliances - e.g. toasters, vacuum cleaners
- Lighting equipment - mainly fluorescent tubes
- Sports and leisure equipment - e.g. electronic toys, training equipment
- Medical appliances
- Surveillance and security devices
- Automatic dispensers such as ticket machines
- Power tools - e.g. electrical drills and lawnmowers

# E-waste Toxins



- Hazardous substances found in e-Waste include lead, cadmium, mercury, barium, beryllium, PVC and brominated flame-retardants (BFR's) in circuit boards, batteries, and color cathode ray tubes (CRT's). These cause carcinogenic emissions into the air, soil and groundwater. Furthermore, it has also seriously affected human health.... like damage to the central nervous system, blood, kidneys, lung cancer and impeded brain development in children.
- Televisions and CRT monitors contain 5 kilogram of lead, on an average (the exact amount depends on size and type). Mercury from electronics has been cited as a leading source of mercury in municipal waste. In addition, brominated flame retardants are commonly added to plastics used in electronics. If improperly handled, these toxics can be released into the environment through incinerator ash or landfill leachate.

# E-waste Hazardous Components



- Serious human health and environmental risks are associated with the hazardous components that comprise e-Waste. Some notable examples are the heavy metals, toxic chemicals and brominated flame-retardants found in e-Waste.
- Many countries are facing the dilemma of what to do with the growing amounts of obsolete electronics. Rapid changes in computer technology and the emergence of new electronic gadgets exacerbate the problem.
- e-Waste contains more than 1000 different chemical compounds and it is the fastest growing and most polluting industrial products of our time.



# Current Scenario in India



- High-risk backyard operation
- Missing efficient and environmentally sound technology
- Rudimentary methods: breaking, acid baths (piranha baths), open burning
- Children and women exploited
- Risk awareness - very low
- Occupational health, safety and environmental hazards
- Release of toxins into soil, air and water
- Loss of resources due to inefficient processes
- Disproportionate sharing of gains
  - Traders most benefited
  - Workers most impacted

# Waste Re-Energy's Capabilities Are Expansive And Unique

## Waste Re-Energy's Service Offering

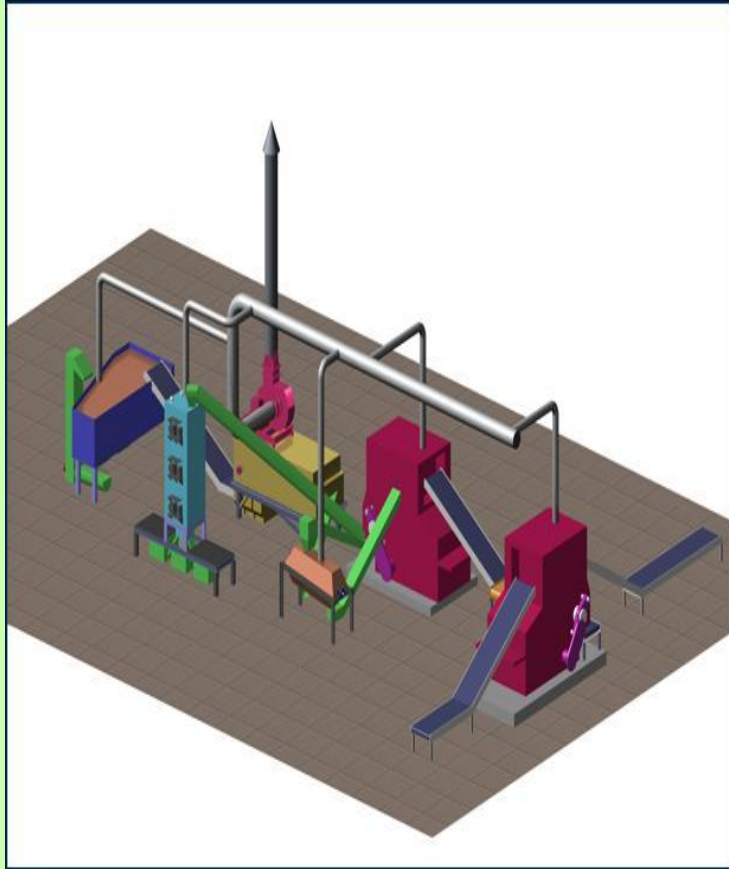


End-to-End Managed Process

Integrated Enterprise and Web-based Information Systems



# Patented and Competitive Technology



- Waste Re-Energy has many patents and pending patents, which are exclusively focused on e-Waste Re-cycling technologies. These technologies are currently bleeding-edge for solid e-Waste re-cycling, such as the Brown Goods (IT, telecom and consumer goods) metal and plastic separation process, CRT Laser cutting process and the Battery re-cycling process.
- Despite these technologies being the global leading technologies in e-Waste re-cycling, there are many electronic products that still require specialised recycling technologies to be developed. In particular, LCD terminals, Fluorescent lighting, and X-Ray Re-cycling technologies are required, which Waste Re-Energy's technology partners have been developing over the last two years in partnership with several Universities and with Government sponsorship.

# Technology Areas

1. Brown Goods (IT & consumer goods) material recovery
2. Cable treatment and material recovery
3. CRT monitor treatment and material recovery
4. LCD treatment and material recovery
5. Dry Battery treatment and material recovery
6. White Goods treatment and material recovery
7. Waste fluorescent tube treatment and material recovery
8. Waste X-Ray films' silver treatment and material recovery
9. Government advisory and consultancy for WEEE, RoHS and e-Waste Issues

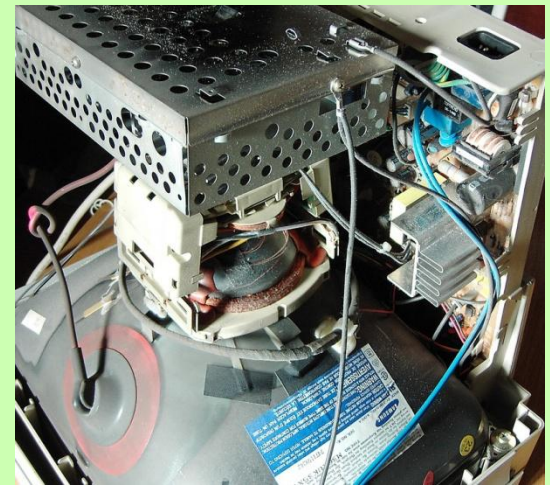


# Cathode Ray Tube

## CRT monitor treatment and material recovery

Waste Re-Energy's CRT re-cycling process separates the panel from the funnel glass allowing the removal of lead, while meeting the demands of CRT manufacturers who use recycled CRT cullet in the manufacturing of new monitors.

Waste Re-Energy's technology allows us to recycle up to 650 000 pieces per year (60 CRT monitors per hour), which is the fastest CRT recycling process in the world. The process is environmentally friendly because it uses no chemicals and is allows over 98% of all material to be recycled.



# Liquid Crystal Display

## LCD treatment and material recovery

The Liquid Crystal Display (LCD) is treated so that all other parts around the LCD component are dismantled in the pre-handling process before they go down the Brown line process.

The LCD is transferred to the crushing process (a Waste Re-Energy designed special crusher), where the component is crushed into fine material. The fine material is transferred to the cleaning process, where chemical combinations and glass are recycled.



# Battery

## Dry Battery treatment and material recovery

In this process, the battery charge is eliminated, the batteries are crushed and then the separation processes produces ferrous metals, which are smelted.



# White Goods

## White Goods treatment and material recovery

Refrigeration & freezer equipment, including air conditioners will be the primary goods used in this treatment, although we will handle all white goods. The key task is the recovery of harmful CFCs from the liquid coolants and insulation foam (PUR) and then to recycle the solid materials in the most effective manner.

The process line will be constructed for crushing refrigerators up to a max. size 2m x1m, 2m x1m and other white appliances.



# Core Competence in E-waste Technology



- Waste Re-Energy has wide knowledge and is in compliance with the most demanding directives in the world.
- We have the technical know-how for analyzing and extracting precious metals from e-Waste in a dry process that means “excluding all chemicals” in the production process (i.e. green technology). The process is a closed and in a vacuum.
- Waste Re-Energy’s process meets the requirements of the WEEE and RoHS directive of the European Union and the EPA (Environment Protection Agency) guidelines of the United States.
- Waste Re-Energy’s input material consists of used IT and telecom equipment, consumer electronics and industrial e-Waste (pre-handled circuit boards). Finished products are ferrous and non ferrous metals , plastics and glass.

# Waste Re-Energy Mission



- Waste Re-Energy is committed to providing efficient, responsible, global and sustainable Waste to Energy solutions to meet the challenges of environmental compliance and human health while conserving the Earth's resources.
- Whether it be RoHS, WEEE, EPA or other initiatives, Waste Re-Energy will continue to monitor the environmental landscape to anticipate market and environmental requirements and deliver the most advanced Waste Re-cycling solutions to address those needs.



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