DISMECO® srl

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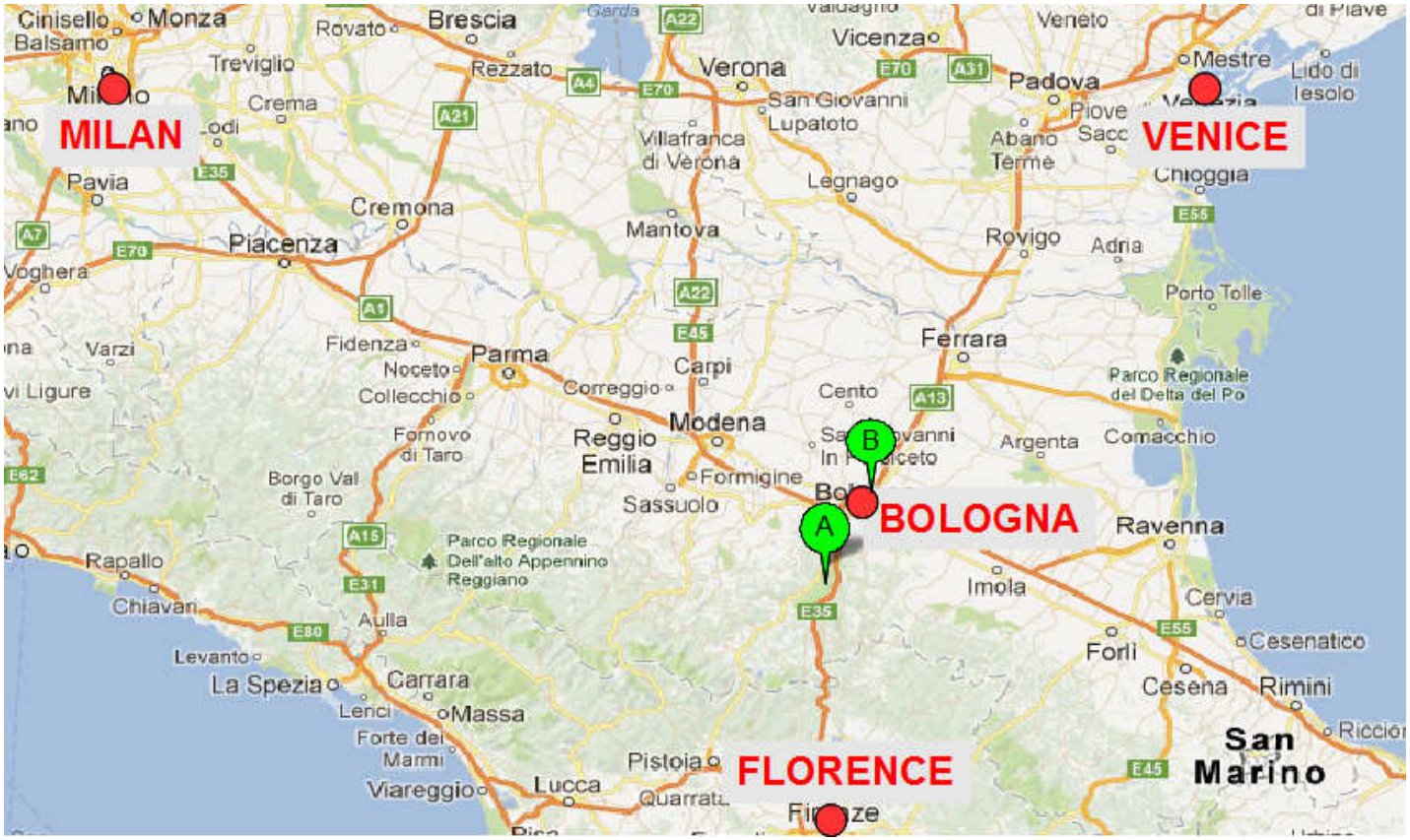
Claudio Tedeschi – CEO

www.dismeco.it

DISMECO locations

Barycentric in Centre-North Italy

“A” - Headquarters / main industrial site: N 44.366715, E 11.21735
“B” - Storage area



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The Company

- Privately held company
- Founded at the end of the 1970s
- Specialized in WEEE processing

*2010 – Project "**Borgo Ecologico**" (literally "Ecological Village")*

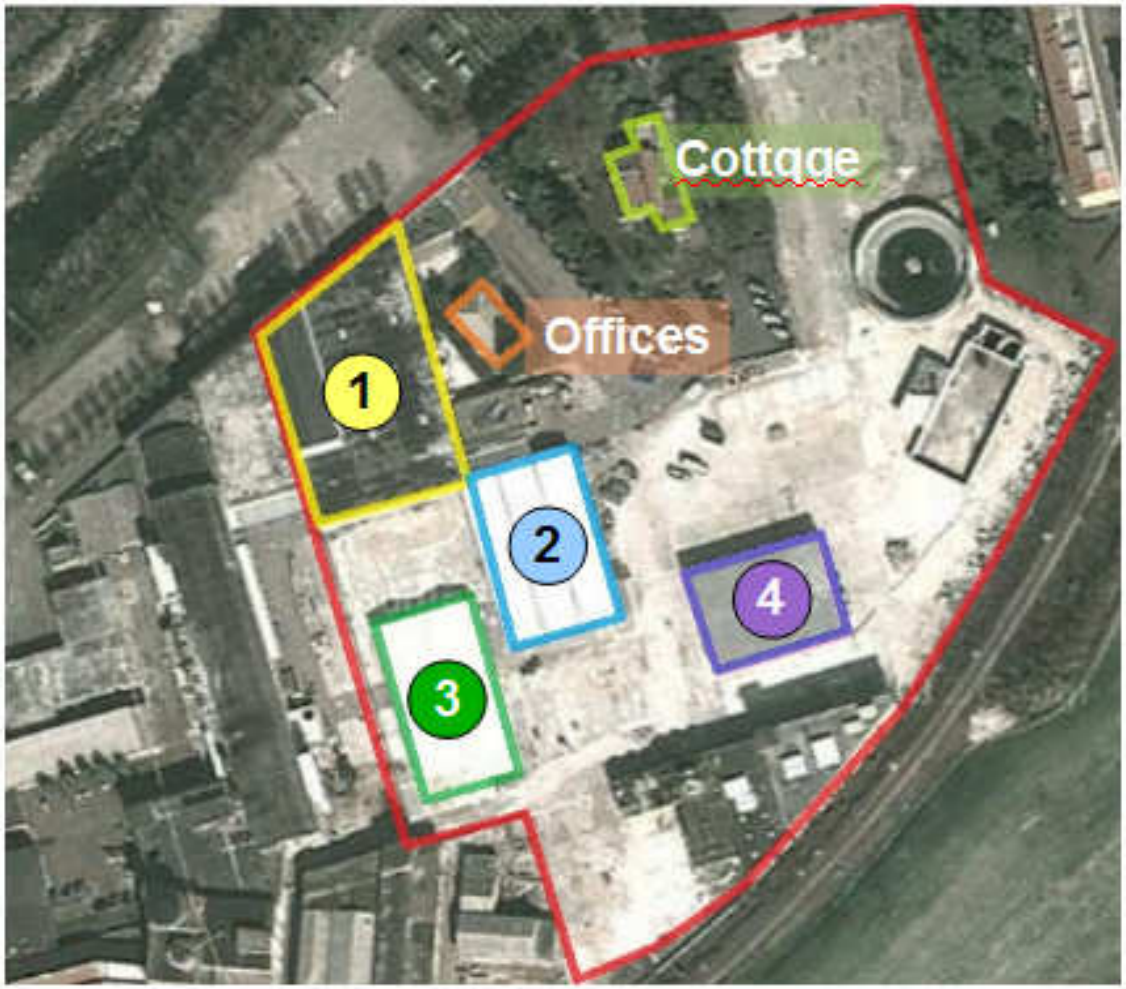
Company scale-up

“Borgo Ecologico” project DISMECO – Confindustria

“Borgo Ecologico”

- **New DISMECO facilities: renovation and revitalization of an abandoned industrial area**
- **Full WEEE's range processing: mission toward the Environment; comprehensive service**
- **Quality certifications: ISO14001 first**
- **Massive cooperation with the Consortia of the Italian WEEE Collection System**
- **Adoption/implementation of specific processing lines for different WEEE's categories**
- **Adoption of state-of-the-art technologies, as far as possible**
- **New projects/studies on materials and machinery; early adopters where feasible**
- **Renewable energies**
- **Social and employment focus in our geographic area**
- **Added value to our territories, cooperating with Local Government / Institutions and private Companies**
- **Educational activities, seminars, events, stimulating and circulating a “recycling” culture**
- **Arts promotion: original and new concepts, particularly related with a “green vision”**

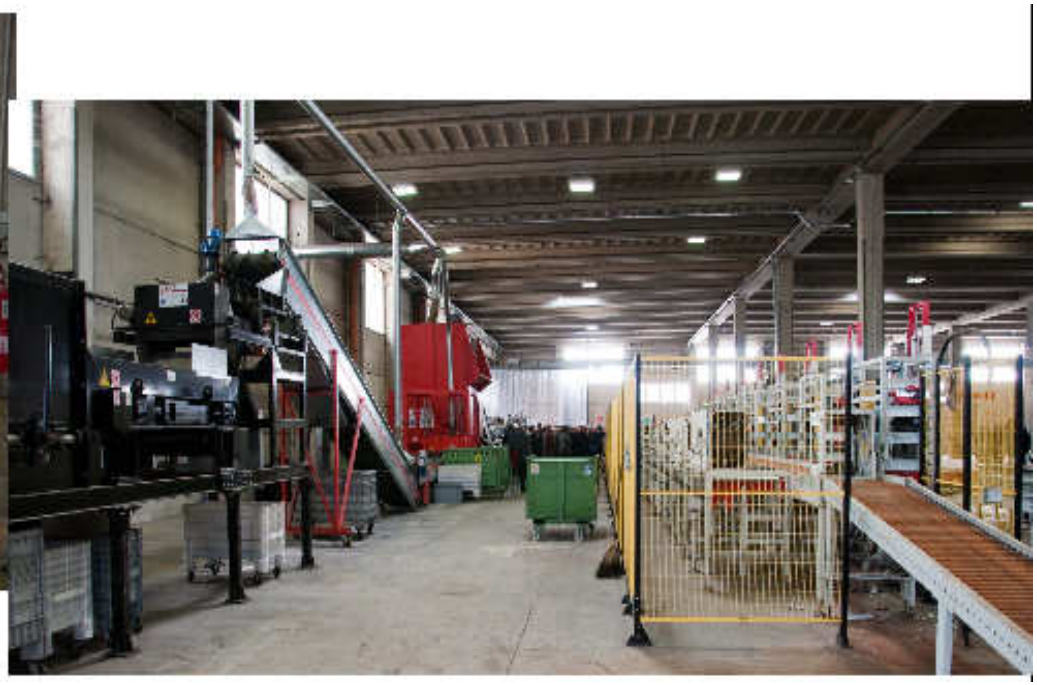
Restructured industrial area



- **42000 sq. Meters of overall area**
- **10000 sq. meters of warehouses**
- **4 distinct processing lines: 1 manual, 3 semi-automated**

BUILDING 1

- **Large household and dispensing equipment**
- **IT/telecoms and consumer equipment (no TV/Monitors)**
- **Small household, tools, toys and leisure (no TV/Monit.)**



- Manual disassembly through customized semi-automated line
- 2 grinding machines (rough pre-grinder; fine grinder)
- 98% materials recycling on washing machines
- Processing capacity: 50 tons/day

BUILDING 2

- **TV / Monitors**
- **Fridges and freezers**

- Manual pre-cutting disassemby
- Processing through MRT automated CRT cutting machine
- Processing capacity: 320 CRT's/day

- Cooling fluids and exhaust oil extraction with suction / compression machine
- Manual disassembly; fridge chassis sent to external plant with proper grinder
- Processing capacity: 18 tons/month

BUILDING 3

Fluorescent lamps

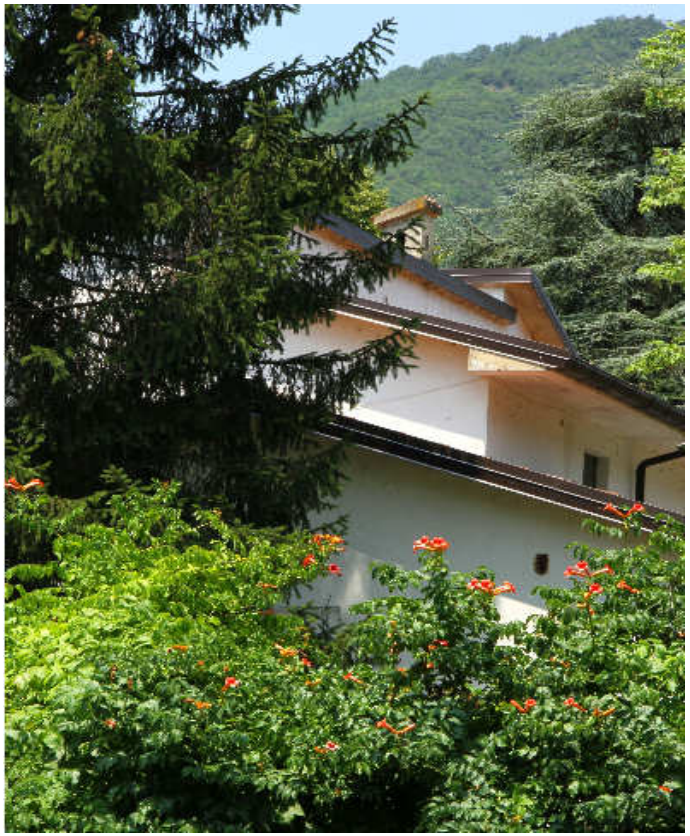
- Linear lamps and Compact fluo. lamps fed to processing machine through two separate, specific feeders
- MRT automated fluo. lamps grinding / separating machine + mechanical sieve for glass refining
- Current processing capacity: 2 tons/day

OTHER BUILDINGS

- BUILDING 4: 2000 sq mt. Stock area

- Offices Building

- "Rizzoli" cottage (Mr. Angelo Rizzoli, founder of the famous "Casa Editrice Rizzoli" books publishing house). DISMECO future events & education building



EC “Relight Project”

The key objective is to test and develop novel technologies in the niche application of compact fluorescent lamp (CFL) recycling, to determine a cost effective means of recovering high value materials from the waste.

There is not only a strong market force from RELIGHT SME participants point of view to achieve cleaner fractions; it is also a requirement of the legislation. It is the view of the participants that to achieve only recycling of lamps to low value outlets is not ambitious, and that the industry should be seeking to recover valuable materials back to a high value use. These issues are prerequisite for the lamp recycling industry.

The RELIGHT project outcomes will determine the type, scale, set up and cost of process equipment that will turn an end-of-life CFL lamp into clean, high value constituent materials of glass, plastic, metal and phosphor powder. The highest value printed circuit board (PCB) component in some CFLs will also be recovered. The project will provide a relatively low cost, low throughput technology for the recovery of mercury from the phosphor powder, enabling the resultant non-hazardous powder to be reused. The powder contains several valuable rare earth metals – this process will better and more cost effectively prepare these powders for sale to recovery facilities in Europe, and enable a higher price to be paid to the SMEs.

A major advantage of this approach is to enable the lamp recycling industry to manage all materials on the production site and minimise transport to specialist mercury recovery facilities. The impact of this more cost effective approach to lamp recovery will enable smaller regional facilities to become cost effective in Europe, to replace the vast logistics need that currently operates in transporting lamps to remote recycling facilities.

Key Objectives

To meet the waste electrical and electronic equipment (WEEE) Directive requirements and handle the increasingly large volumes of hazardous CFL and other gas discharge lamp waste best practice in lamp recycling needs to be improved and made commercially plausible. If this is achieved, there is a huge global market potential. The number of End of Life CFLs will more than double in the near future and the collection levels will increase from 10-20% up to 80-90%. First on the market with a technically and commercially effective process will be able to take a large part of this volume and be able to solve a huge environmental problem.

The CFL recycling technology to be developed aims at achieving the following targets:

- Separation of CFL into glass, phosphor powder, plastics, printed circuit boards and metal parts with the materials having the following maximum content of contamination
  - Glass: mercury content <1-2ppm; plastic content <200 ppm; metal content <20 ppm
  - Phosphor powder: mercury content <1-2 ppm
  - Plastics: mercury content <1-2 ppm; glass content <1%
  - Printed circuit boards: mercury content <1-2 ppm
  - Metal parts: mercury content <1-2 ppm
- Treatment capacity of 300 kg/h
- No wet chemistry involved (or only small amounts of liquids required)
- Affordable processing line, anticipated target pricing of maximum 350 000 Euro
- Continuous, automated process (less mercury exposure for operatives)

C-Tech INNOVATION
MRT
CHALMERS INDUSTRITEKNIK
sairem
WISER
DISMECO

Project name:
RELIGHT

Project Leader:
- C-Tech Innovation, UK

Project Consortium
- Chalmers Industriteknik, Sweden
- MRT System International AB, Sweden
- SAIREM SAS, France
- WISER Recycling Ltd, UK
- DISMECO S.R.L, Italy

Financing:
€1.27M

Project duration:
Nov 2012 - Oct 2014

Contact:
ed.jones@ctechinnovation.com

SEVENTH FRAMEWORK PROGRAMME

The key objective is to test and develop novel technologies in the niche application of fluorescent lamps recycling, to determine a cost effective means of recovering high value materials from the waste.

Renewable energy: photovoltaic roofs

About 900 Kw overall system capacity

Future, potentially: water energy

Educational Social

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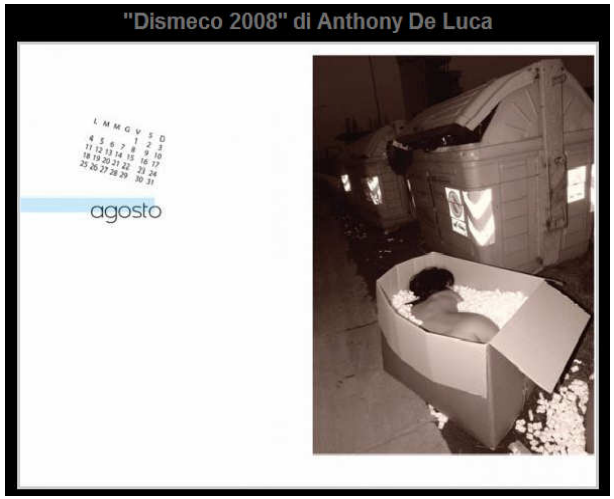
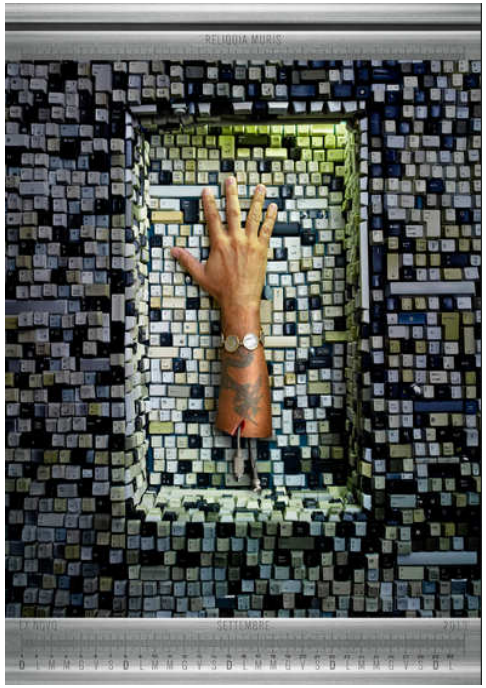


A r T S



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How do we transform washers?

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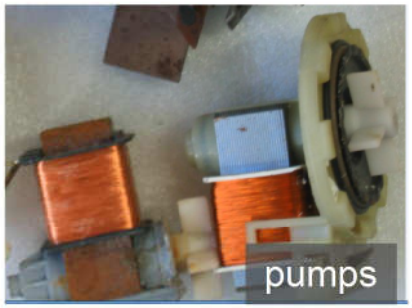
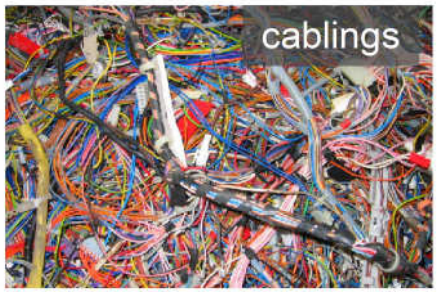
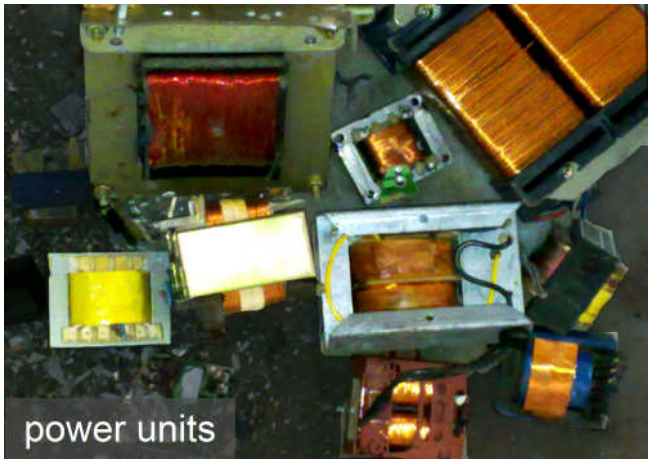


ballast (concrete)



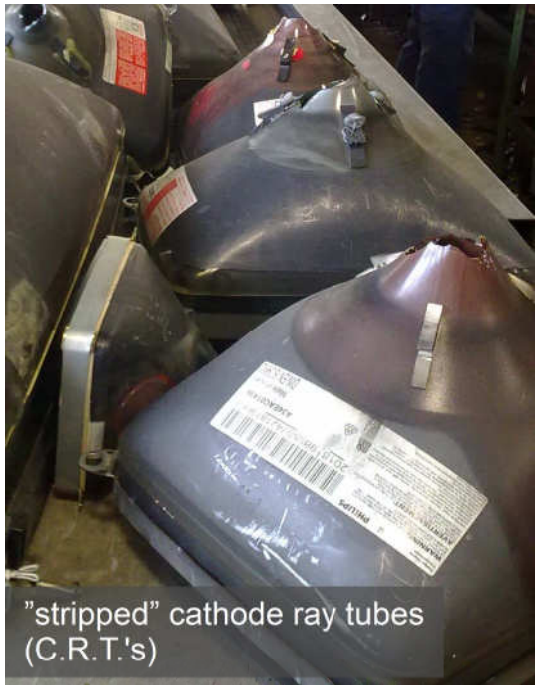
How do we transform TV's / Monitors?



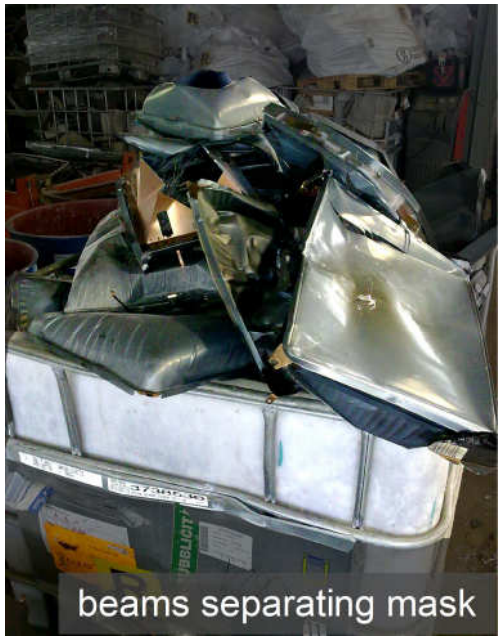
How do we transform TV's / Monitors?


deflection coil

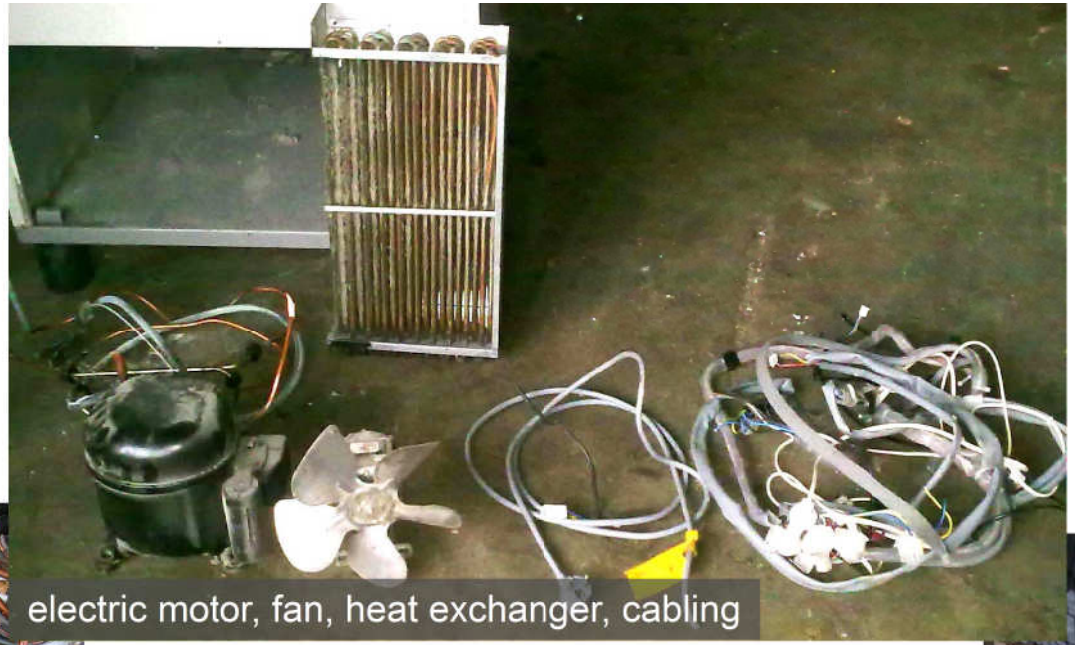

electrons guns


"stripped" cathode ray tubes (C.R.T.'s)


C.R.T.'s cut up by the machinery


beams separating mask

How do we transform fridges?

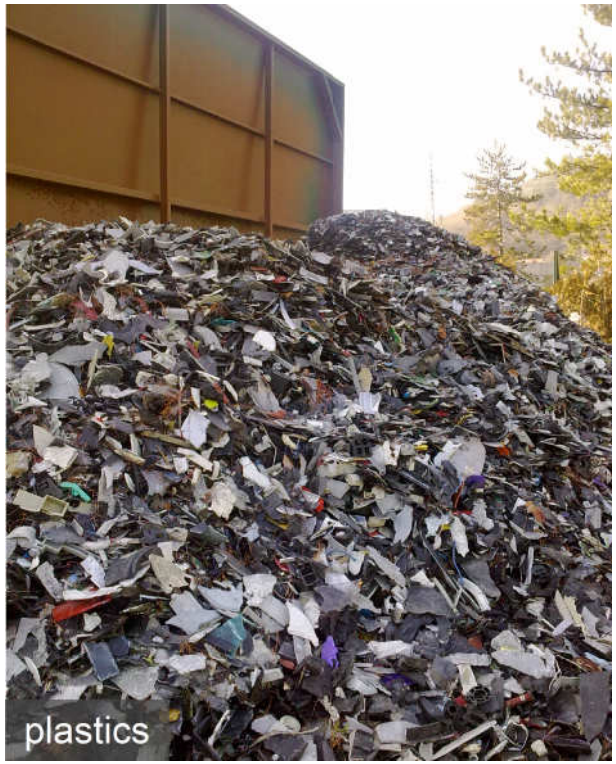

electric motor, fan, heat exchanger, cabling


packed copper components


copper components


internal plastics

How do we transform PC's?



How do we transform fluorescent lamps?

How do we transform fluorescent lamps?

Thank you