

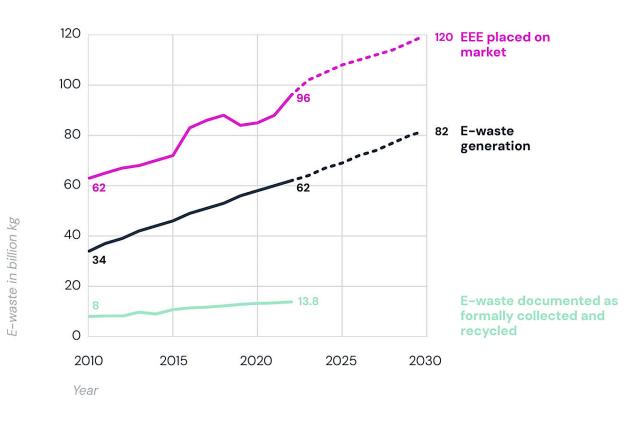




# **Market Challenges**

Exponential rise in production of E-Waste

Worldwide, the growth of e-waste generation is outpacing the formal collection and recycling by almost **a factor of 5**.

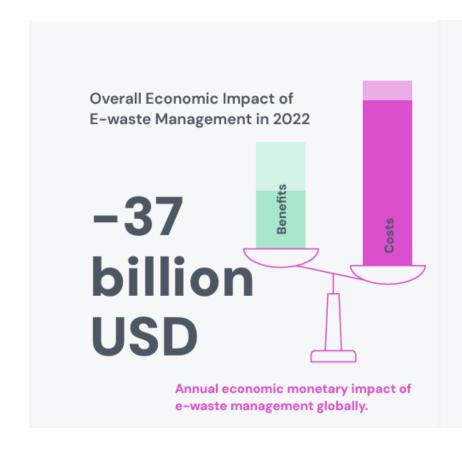






# **Market Challenges**

Costs outweigh benefits



### **Benefits**

billion USD of monetized value of avoided greenhouse gas emissions.

worth of recovered metals brought back into the circular economy.

### Costs

10 billion USD associated to the cost for treatment of e-waste.

78 billion USD in externalized costs to the population and the environment.

Source: The Global E-waste Monitor 2024



# **Behavioural Challenges**

Consumers, scrappers and informal markets

### Consumers

- Waste is something we don't want
- It's made of xxx, so it should go...
- What's in it for me?
- Who will keep me from making a quick buck from selling my old washing machine?

# Scrappers & informal markets

- Metal is metal, no matter which product it was once a part of.
- What about my business and my employees?
- If someone else discarded it, then I can take it.



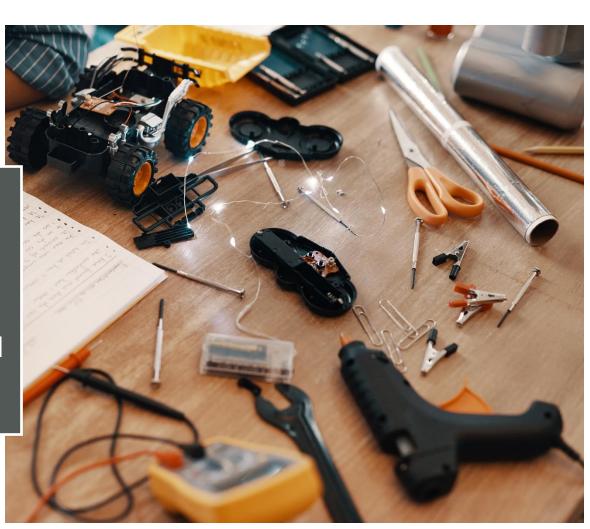
# **Behavioural Challenges**

Hoarding

A recent study found that EU households are home to an average **74 electrical** and electronic items each (excluding lamps and luminaires, **61 are in use**, while an estimated **4 items are hoarded** and not working (and thus have not yet been discarded).

Source: The Global E-waste Monitor 2024, United Nations Institute for Training and Research (UNITAR)





# **Behavioural Challenges**

Informal Markets





BANCA TRABALHO E EMPREGO CONJUNTURA FINANCAS PÚBLICAS

### Weee-Follow



A study conducted by Electrão between 2020 and 2021 concluded that 3 ou of 4 electrical appliances were deviated from the formal supply chain.

Most were taken to waste management facilities unlicensed for WEEE.

#### RECICLAGEM

### Três em cada quatro equipamentos eléctricos usados são desviados para o mercado paralelo

O percurso de 73 equipamentos, distribuídos em 12 dos concelhos mais populosos de Lisboa e Porto, foi monotorizado por GPS. E conclui-se que 75% foram desviados para o mercado paralelo: acabaram a ser transformados em sucata metálica ou exportados, sem chegar às unidades de tratamento.

14 de Outubro de 2021, 9:12



PAULO PIMENTA

Três em cada quatro (75%) equipamentos eléctricos usados colocados na via pública para recolha pelos servicos municipalizados são desviados para o mercado paralelo sem chegar às unidades de tratamento para descontaminação e reciclagem, segundo um estudo feito em Portugal.



# **Material Challenges**

Shape, size, hazard and value





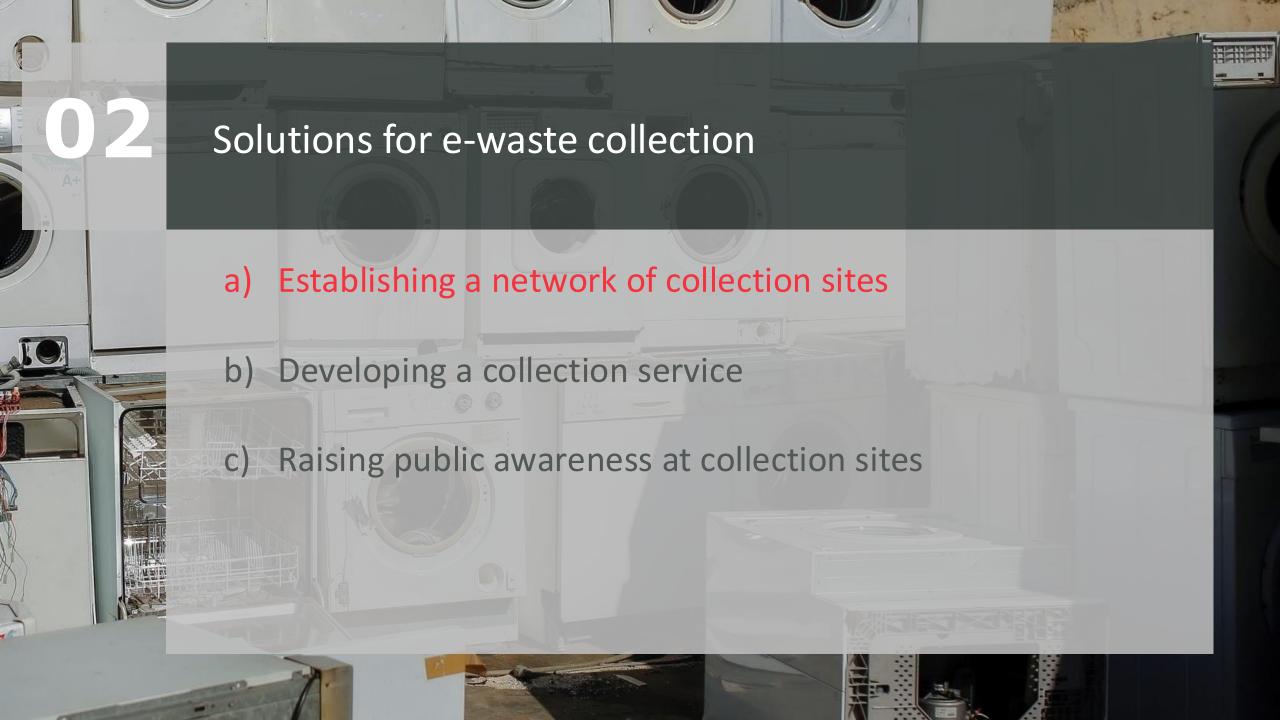




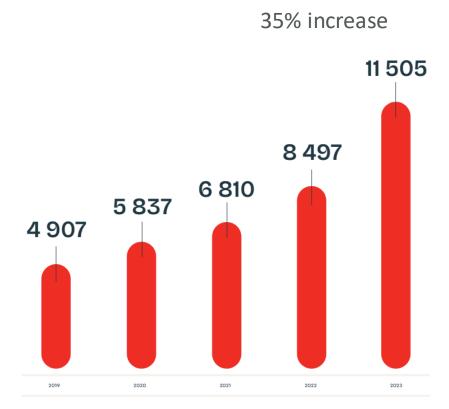




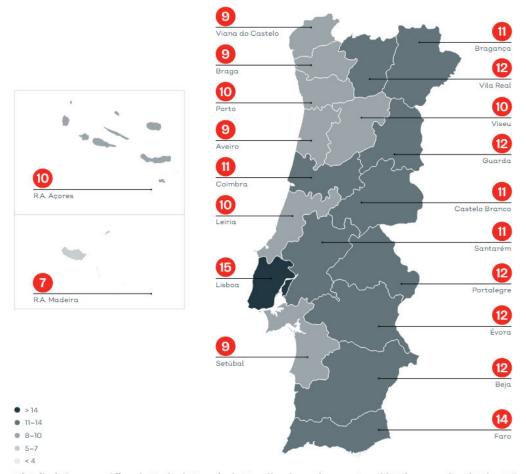




Number of collection sites for e-Waste



Evolução do número de locais de recolha de equipamentos eléctricos usados da Rede Electrão.



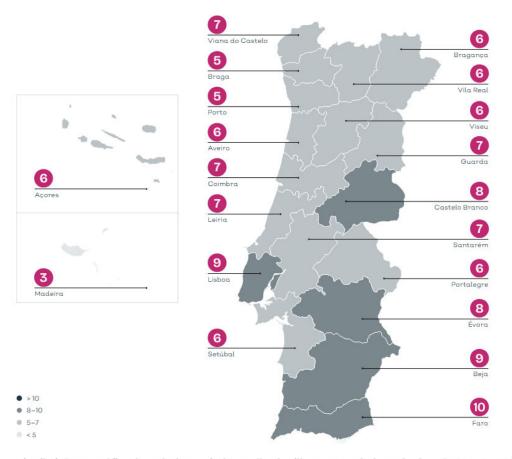
Distribuição geográfica da Rede de Locais de Recolha de equipamentos eléctricos usados do Electrão (por 10 000 hab.)



Number of collection sites for used batteries







Distribuição geográfica da Rede de Locais de Recolha de Pilhas e Acumuladores do Electrão (por 10 000 hab.)



Types of collection sites for e-Waste

### Fire Stations



441 collection sites

#### Schools



930 collection sites

#### Retail



998 collection sites

### **Urban Waste Management systems**



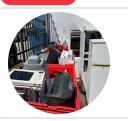
287 collection sites

### Consolidation facilities



5 collection sites

#### Other



8844 collection sites

Types of collection sites for e-Waste

### Fire Stations



440 collection sites

#### Schools



930 collection sites

#### Retail



1380 collection sites

### **Urban Waste Management systems**



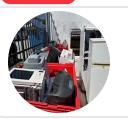
287 collection sites

### Consolidation facilities



5 collection sites

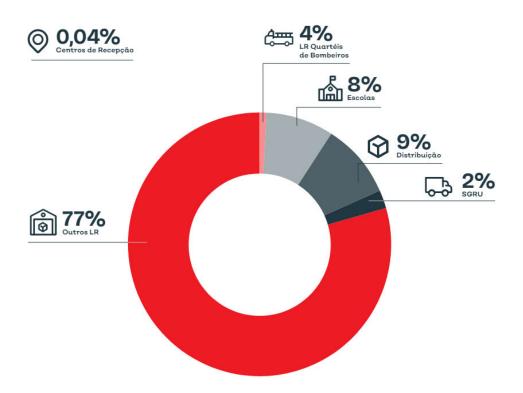
#### Other



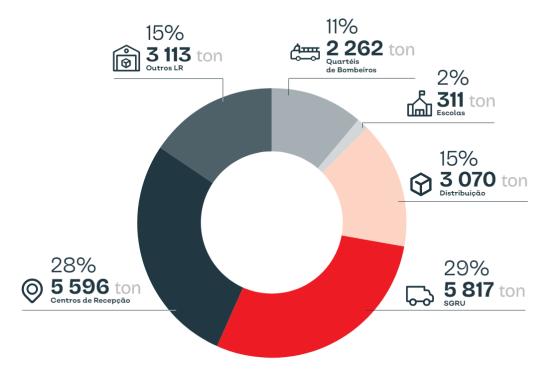
4175 collection sites

e-Waste per kind of collection site

### WEEE Collection sites



### WEEE Collected





# E-waste from consumers



CONSUMER





Porta-a-Porta



# COLLECTION



Ponto Electrão



Retail



Fire Stations



Schools



Urban waste management services



# CONSOLIDATION FACILITY



SPECIALIZED RECYCLING FACILITY



Recycling



Energy recovery



Landfill

# E-waste from companies



### COMPANIES





### **ON SITE COLLECTION**



Industrial sites



Offices



**Public Administration** 



Maintenance services



**Technical Centres** 



Other



# CONSOLIDATION FACILITY



### SPECIALIZED RECYCLING FACILITY



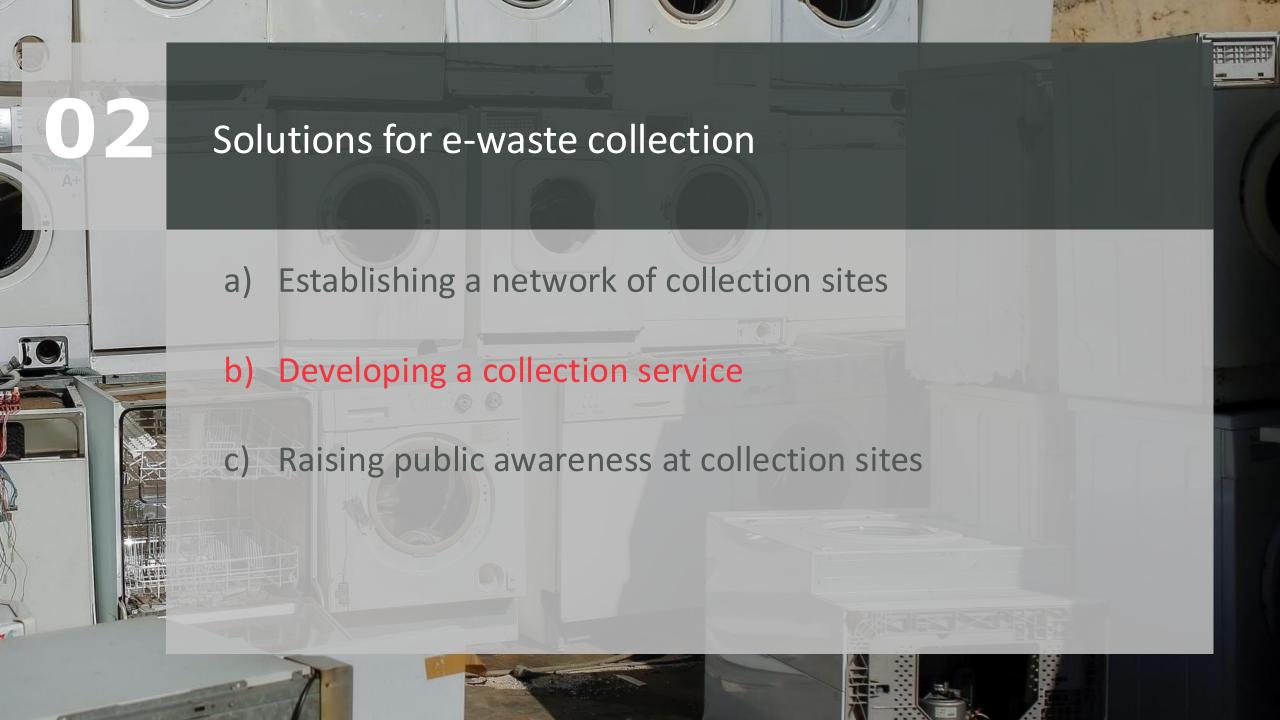




Energy recovery

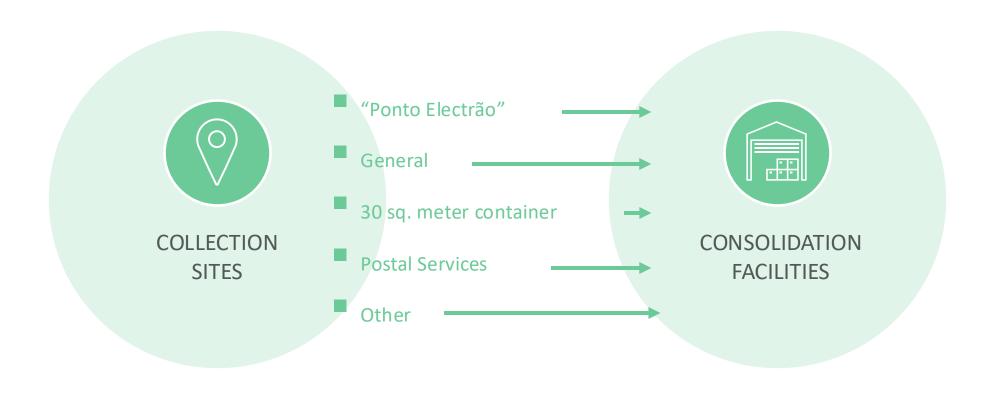


Landfill



# Electrão's supply chain

Getting e-waste from collection sites to Consolidation Facilities





Types of logistics

#### Ponto Electrão



- Ponto Electrão must be full
- 1 van, 2 people, pallet cart
- · Includes cleaning, if needed
- 260 kg per collection on average

#### Postal services



- Batteries / toners
- Must be in closed box ready for collection
- 1 full box minimum
- 30 kg per collection on average



Types of logistics

### General



- At least 150 kg of e-waste
- Lamps and batteries must be in boxes
- 1 van, 2 people, 1 pallet cart
- 590 kg per collection on average

#### Container



- 30 sq. meter container must be full
- Container is collected full and replaced with empty one
- 2430 kg per collection on average



Containers in collection sites

Sent via postal service

Placed by logistics during collection

#### Em 2023 foram entregues aos locais de recolha um total de:



Pilhão Mini 730 UNIDADES



Caixa Pilhas Média 4727 UNIDADES



Caixa Pilhas Suporte 1073 UNIDADES



Cx. Lâmpadas Tubulares 3869 UNIDADES



Cx. Lâmpadas Diversas 2 9 5 1 UNIDADES



Cx. Toners 6780 UNIDADES



Cx. Pequenos REEE\* 1662 UNIDADES



Cx. Multifluxos 379 UNIDADES



Caixas PEAD Lâmpadas

#### No final de 2023, o Electrão tinha no terreno:



Contentores 30 m<sup>3</sup>

134 UNIDADES



Contentores 18 m<sup>3</sup>

114 UNIDADES



Contentores  $1 \, \mathrm{m}^3$ 



Exterior



Ponto Electrão Interior



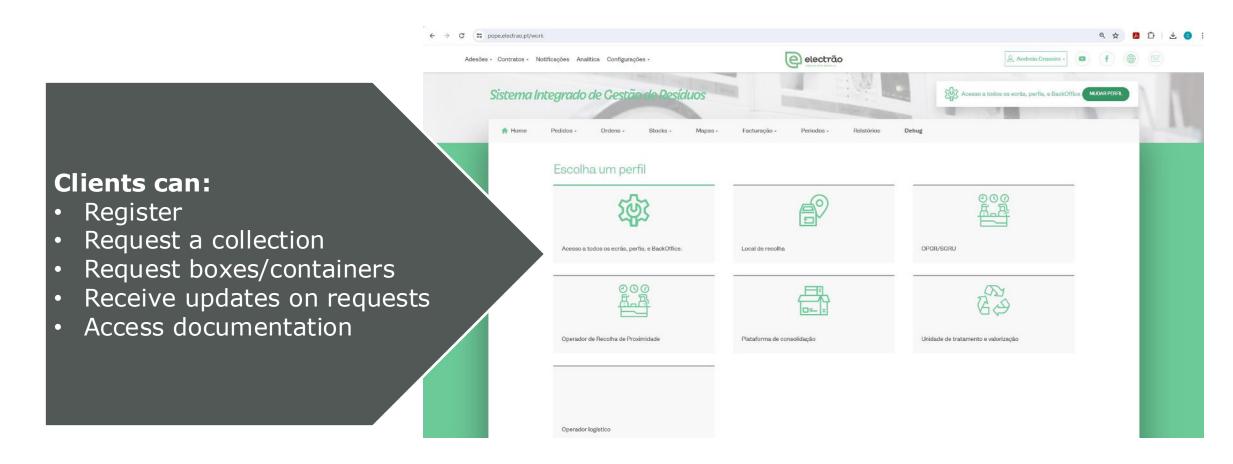
Ponto Electrão Lâmpadas e Pilhas

512 UNIDADES

Meios de acondicionamento da Rede Electrão

\* Resíduos de Equipamentos Eléctricos e Electrónicos

Operational management platform



### Electrão's contact center

Greeting clients with a smile



### Inbound (e-mail and phone)

- Help with registration and requests
- Answer questions about legislation
- Helpdesk POpE
- Receive PaP requests

### Outbound (e-mail and phone)

- Campaigns
- New collection sites
- Client activation
- Sorting logistical problems



### Ponto Electrão

Collection at shopping centres

- > Electrão created the **first container** in Europe to collect e-waste.
- > It's a great communication tool.
- Design has been changed to prevent robberies, but not 100% effective.
- Ponto Electrão is placed in around 200 collection sites, representing over 600 tonnes per year.





### Retail

### Collection in stores and wharehouses

- > EU regulation dictates that retailers must have "take back schemes" for used electric equipment and batteries.
- Retailers must provide take back solutions for in store and online purchases
- > Electrão provides containers and develops some awareness raising campaigns in partnership with retailers.
- Retailers have around 1000 collection sites, representing over 3 000 tonnes per year.





# **Quartel Electrão**

Collection at Fire stations

- Awareness-raising campaign in partnership with **Fire Stations** (volunteer firefighter's organizations).
- > Fire stations become e-waste collection sites.
- Volunteer firefighter organizations receive a value per ton and the ones with best results get extra awards, including a Firefighting Vehicle.





# **Quartel Electrão**

Results in 2023

201

Number of stations participating

2 3 7 4

**Tonnes of e-waste** collected

265 000 €

Awarded to volunteer firefighter's organizations



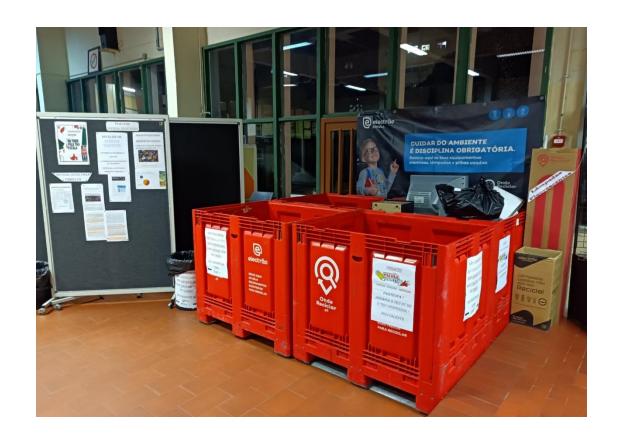


# **Escola Electrão**

Collection in Schools

- > Awareness raising campaign for schools.
- Schools become collection sites.

> Students and teachers get involved in educational challenges and receive awards.





# **Escola Electrão**

Results in 2023

550

Number of Schools participating

320

**Tonnes of e-waste** collected

26 000 €

Awarded to schools, teachers and students





# Household waste management services

Partnerships in waste collection and awareness raising

- Electrão provides containers and pays a value per tonne to recover e-waste collected by household waste management services.
- E-waste is collected separately but also recovered from sorting other waste categories.
- Electrão establishes partnerships in awareness raising campaigns with these organizations.
- Around 300 collection sites, representing over 5 800 tonnes per year.





### Porta-a-Porta

Household collection service

- Collection of bulky household appliances inside the home.
- In partnership with 8 municipalities in the Lisbon area, where 1,5 million people live.
- Currently employs 4 collection teams and does over 500 services per month.
- > In 2023, 203 tonnes of WEEE were collected.





# Ondereciclar.pt

Where can I take my old appliance for cecycling

- > Website dedicated to informing the general population about recycling.
- > It allows you to search for the nearest place to deposit waste.
- You will also find other information, tips and curiosities.









