



Arab Republic Of Egypt  
Ministry Of Environment



Empowered Lives.  
Resilient nations.



# Medical and Electronic waste Management project

## E-waste component

September 2020



# Agenda

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- Introduction

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- Significance of E-waste

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- E-waste in Egypt

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# Introduction

**E-waste or 'WEEE'** means electrical or electronic equipment which is the waste including all components, sub-assemblies and consumables which are part of the product at the time of discarding”.

Electronic equipment are one of the fastest growing waste stream in many countries. **E-waste** makes up around **5% of municipal waste world wide** and counted as fastest growing stream of municipal solid.

United Nation University estimated that **41.8 million tones** of electronic waste was generated in **2014** where only **6.5 million tones** were collected by **formal recyclers**.

By **2018**, it is estimated that E-waste will reach **80 million tones**.



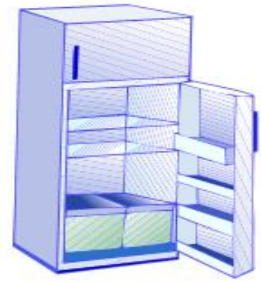


Medical and Electronic Waste Management Project

# Introduction

## Categories of E-waste

1. Large household appliances



2. Small household appliances



3. IT & Telecoms equipment



6. Electrical & electronic tools



7. Toys



5. Lighting equipment



8. Medical equipment systems



10. Automatic dispensers



9. Monitoring & control equipment



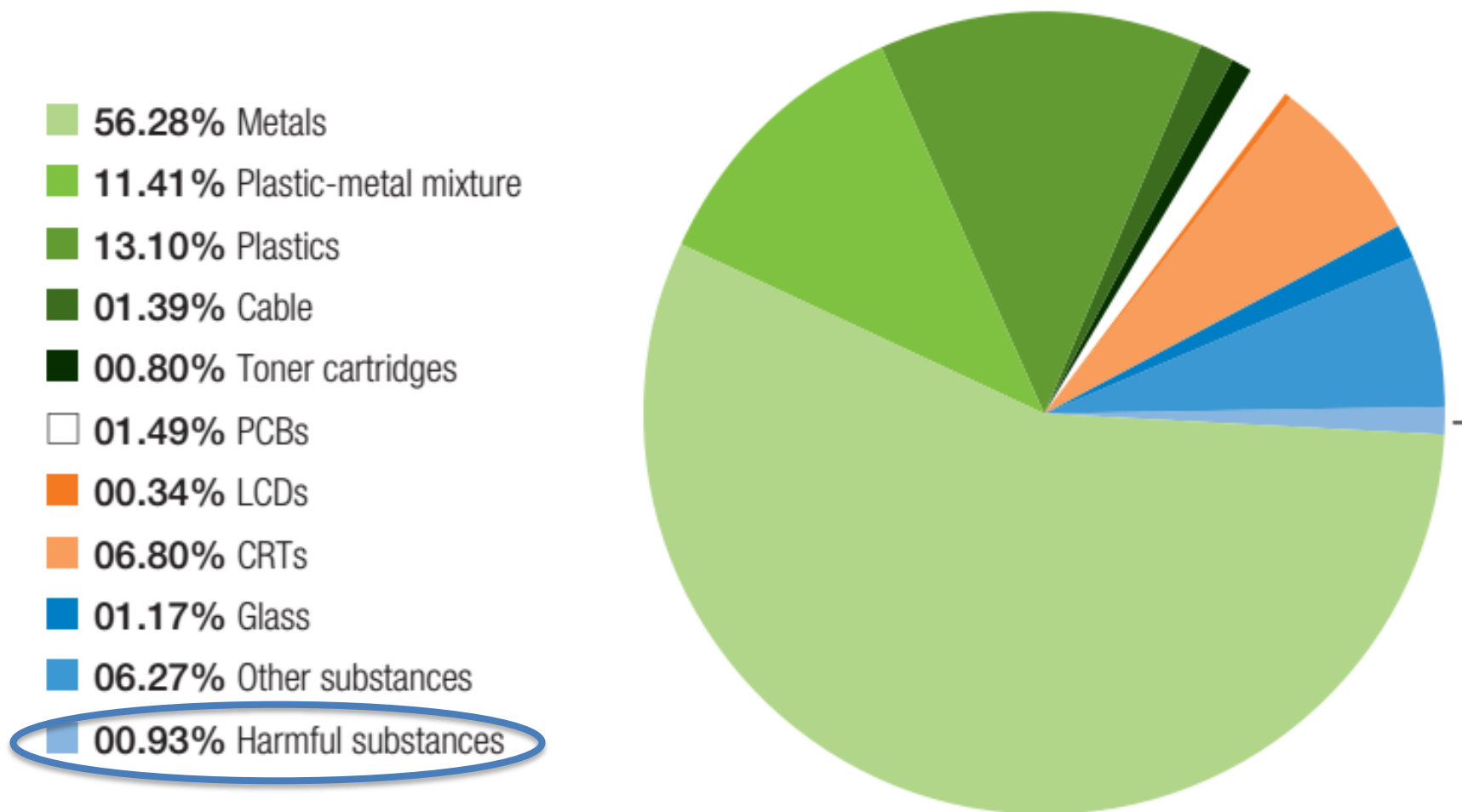
4. Consumer equipment



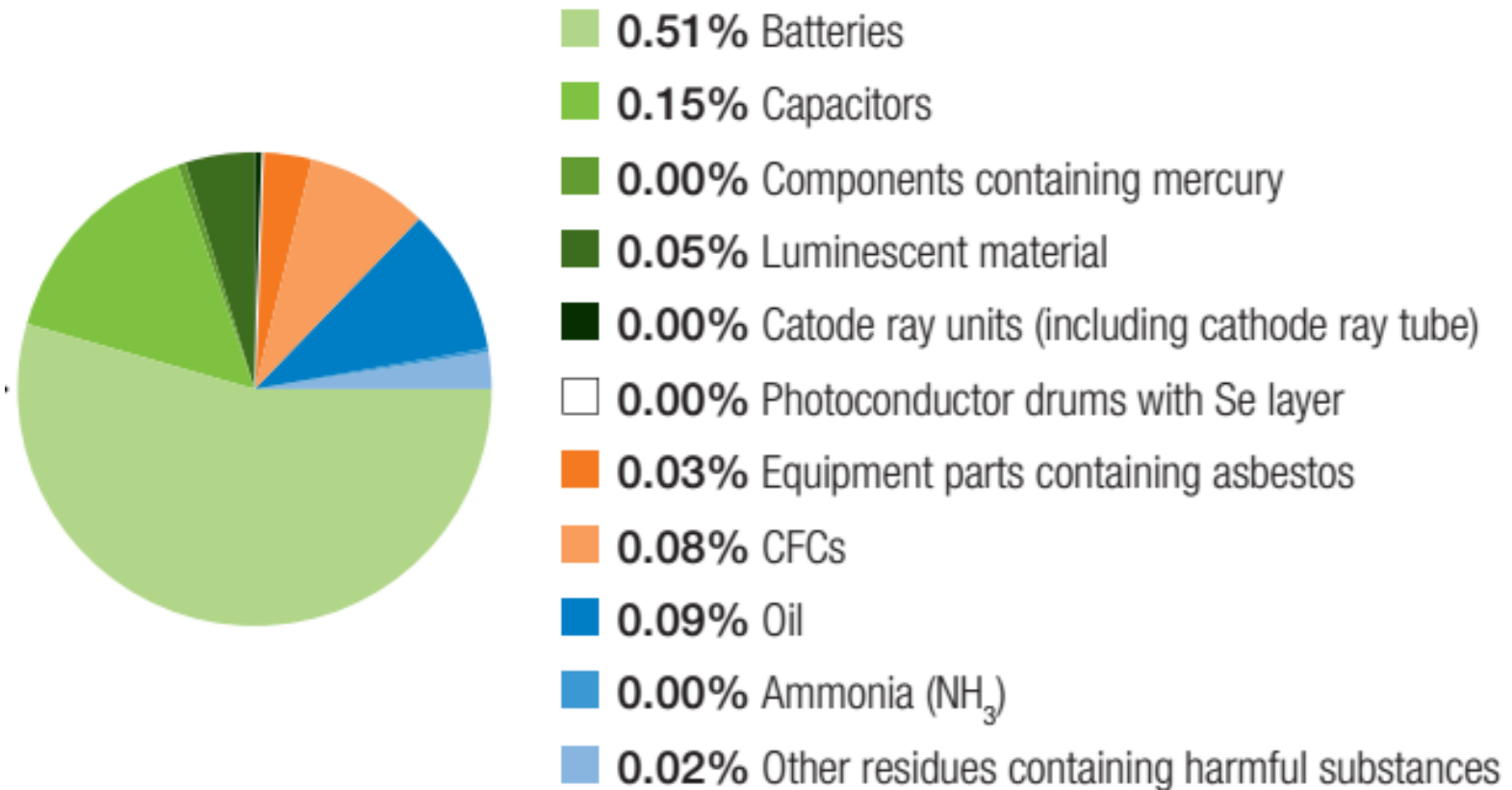
Source: WeeeForum



# Composition of e-waste fractions



# Composition of e-waste fractions: focusing on the 1% harmful substances

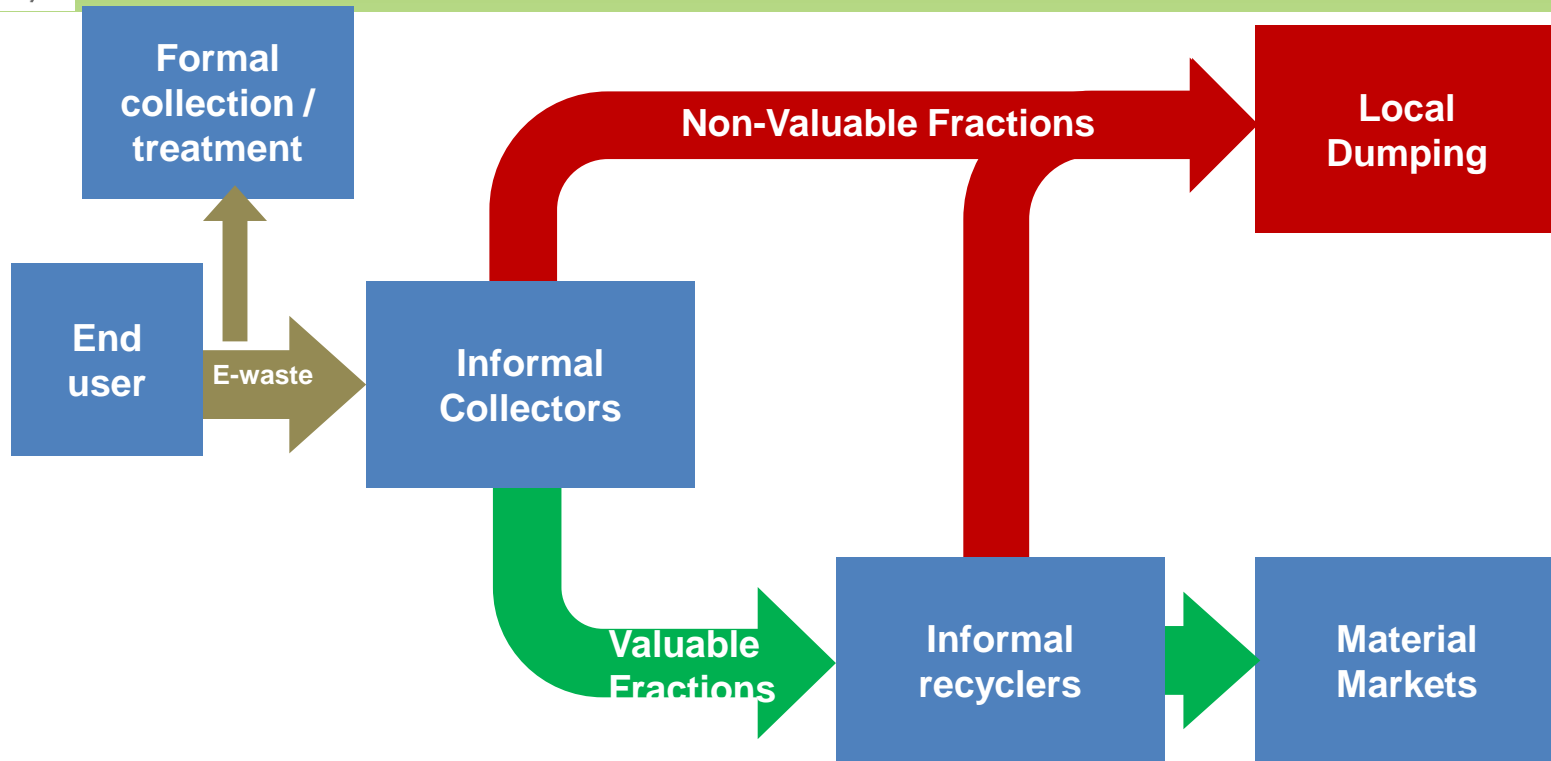


# Composition of e-waste fractions: focusing on the 1% harmful substances

Pollutants	Desktop computer	Cathode Ray tube monitor	LED monitor (flat screen)	Electric toothbrush	Fridge	Oven
Brominated flame retard plastic	X	X	X	X	X	X
Capacitors containing PCB	X	X	(X)		X	X
Leaded glass		X				
Mercury lamps			X			
CFC gases					X	
Asbestos						X
Battery	X	X	(X)	X	(X)	(X)



# The problematic informal sector



Informal recyclers exist in many countries; they focus on valuable fractions in e-waste and dump non-valuable fractions.

Some formal and approved recyclers may already exist but volumes are often low.





# The problematic informal sector: Worldwide



Waste Resources

Polluting soil, water and air

Human Health Consequences

Lacking technologies

Lacking Legislative Framework

Preventing fair local business

Survival Imperative

**Don't consider it "just a developing countries' problem" !!**

# Why is e-waste a concern?

E-Waste contains many substances

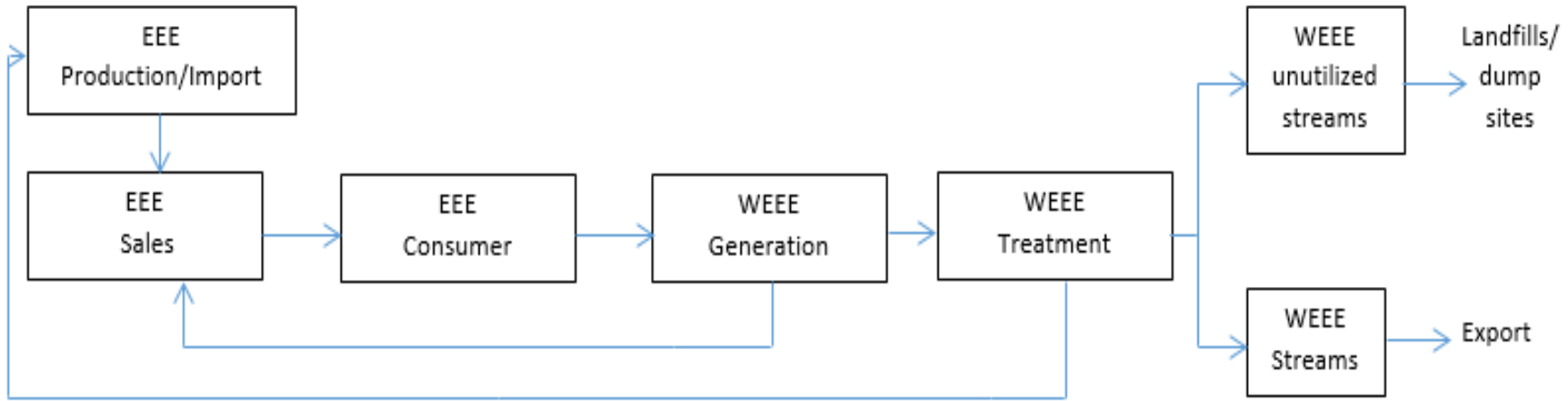
- **Hazardous:** heavy metals, flame retardants, PCBs (polychlorobiphenyls)...
- **Valuable:** Au, Ag, Pd, Cu, Fe, Al, glass, plastics...



# E-waste Recycling Chain



Medical and Electronic Waste Management Project



## COLLECTION & SORTING



## DISMANTLING & SORTING



# E-waste in Egypt

- Egypt is among top three African countries with highest E-waste generation
- Between 2015 and 2019, the stock of Equipment (ICT) in Egypt would increase by around 5.9%, rising from 755K tons to 780K tons.
- The flow of WEEE would increase by around 15.7%, rising from 73K tons/year in 2015 to 84k tons/year in 2019, indicating an annual WEEE mass flow increase of 3.14%.





# E-waste in Egypt

- The largest amount of mass flow is generated by the enterprises, followed by households then governmental sector.
- Currently only around **1,584.0** tons/year of electronic waste is been collected from the total generated electronic waste mass flow, which only represents **2.2%**.
- The **waste mass /year/inhabitant** is around **0.80 kg** (WEEE1)



# Stakeholder Assessment

## Formal Sector



# Stakeholder Assessment

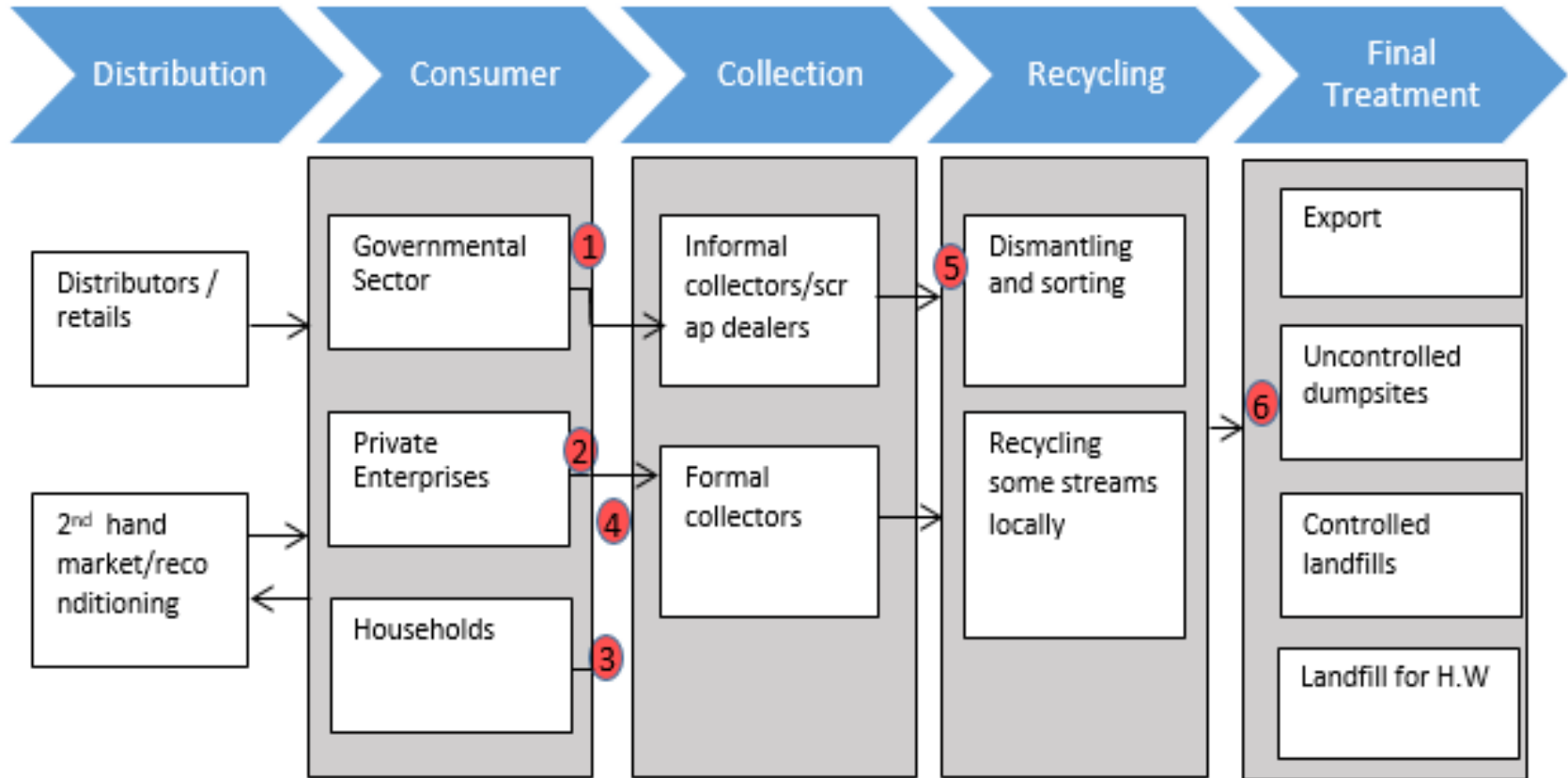
## Informal Sector



E-waste  
recycler



# E-waste Flow in Egypt







# Recommendation

**Laws & Regulations:** Develop short and succinct law on the disposal of obsolete electrical equipment as a type of waste, and recognize it with a term such as WEEE/WEEE.

**Collection:** Enforce [licensing](#) and [EHS regulation](#) requirement on collectors/recyclers participating in [auctions](#) for WEEE from governmental sector and enterprises.

**Recycling & Treatment:** Empower the formal sector through trainings, technical and financial scheme. Design a business models for informal sector and incentives through better prices. Encourage civil society and development NGOs to prioritize WEEE recycling sector. **Awareness and Education:** Conduct [mass awareness campaigns](#) supported by booklets and manuals on WEEE.

**IMS:** Require governmental institutions affiliated with WEEE industry to adopt [digital format of information management and digital based documentation](#).

**EEE Producers/Retailers:** integrate [end producer/end distributor responsibility in legal framework with respect to WEEE](#)





# Medical and Electronic waste management project



# Introduction

The Government of Egypt, represented by **the Ministry of Environment (MOE)** in coordination with the **Ministry of Foreign Affairs (MoFA)** and the technical support of the **United Nations Development Program (UNDP)** has succeeded in obtaining a new package of grants from the Global Environment Facility (GEF) to implement A five years project (started in May 2016) entitled.

*Protect human health and the environment from unintentional releases of POPs originating from incineration and open burning of health care- and electronic waste*



# objective

- Protect human- and environmental health by reducing releases of POPs and other hazardous releases (e.g. mercury, lead, etc.) resulting from the unsound management of healthcare and electronic wastes by provision of an integrated institutional and regulatory framework and demonstrating and promoting BAT & BEP to soundly manage and dispose of such wastes through:
  1. Improving the regulatory system and enhancing its enforcement
  2. Raising awareness on POPs
  3. Establishing the capacity for safe handling and transport
  4. Improving disposal of POPs containing waste

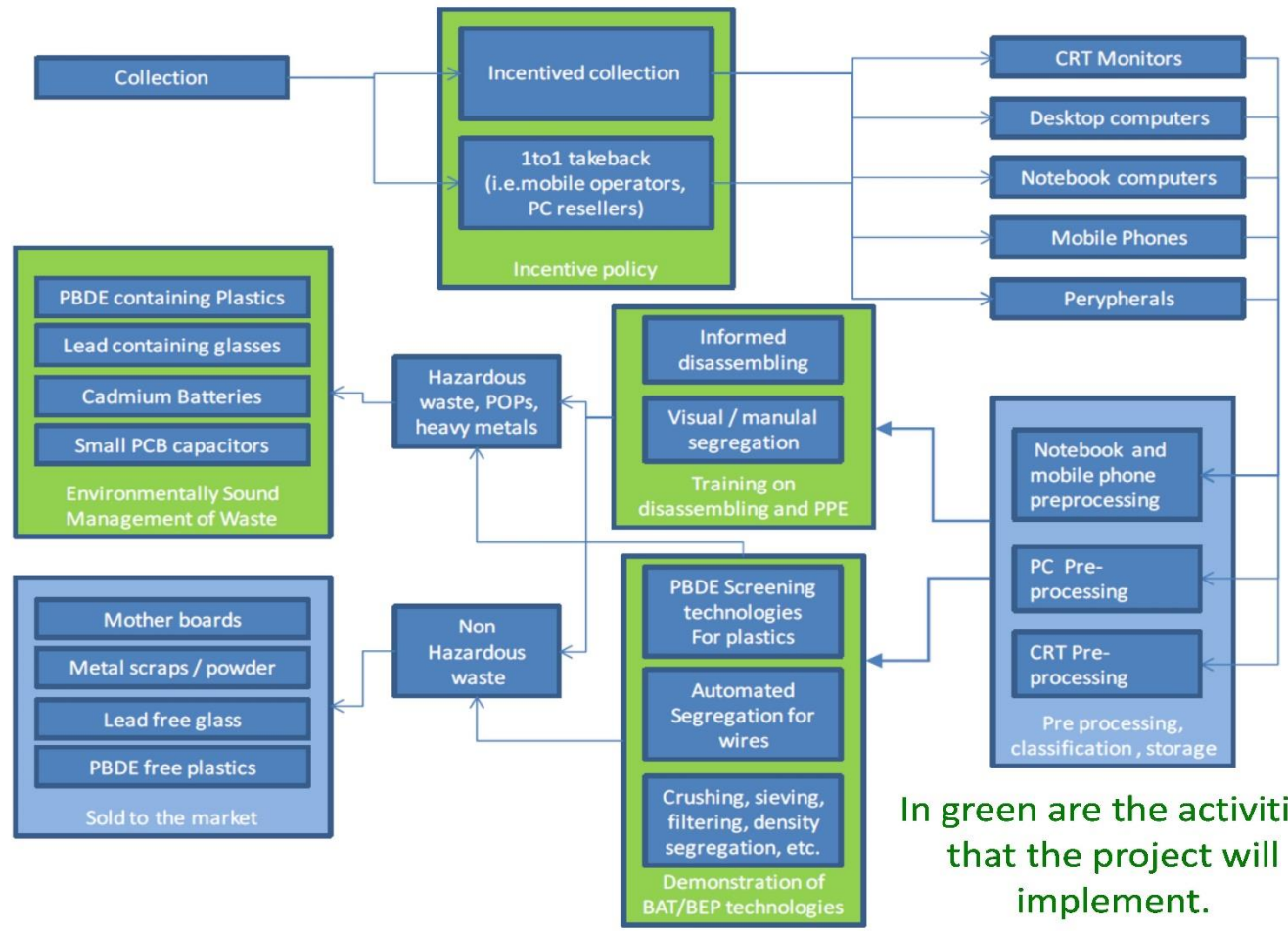


# Electronic waste Management Component





# Strategy



In green are the activities that the project will implement.



# Work Pillars

**Replication of project results at international, regional, National level**

**Capacity Building/  
Awareness raising**

**Introduction of BAT/BEP**

**National policy/  
Regulatory framework**

**National mapping**



# Achievements





# National mapping

- Assessment of E-waste in Egypt
- Baseline on POPs, UPOPs, and associated hazardous releases (mercury, lead, cadmium) from E-waste processing



# BAT/BEP

- Guidelines on ESM of E-waste in Egypt
- Guidelines for Handling ,processing, and Disposal of E-waste Components Containing Heavy Metals and POPs



# BAT/BEP

- Assessment (cost/effectiveness analysis) of BAT/BEP technology options and facilities available for E-waste containing pops/toxic metals recycling and disposal including segregation cost.



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مركز تنظيم إدارة المخلفات

جمهورية مصر العربية  
وزارة البيئة

مشروع إدارة المخلفات الطبية والإلكترونية

التقييم الأساسي للملوثات العضوية الثابتة (POPs)، والملوثات العضوية الثابتة غير المقصودة (UPOPs)، وما يرتبط بها من انبعاثات خطرة مصاحبة (الزئبق، الرصاص، الكاديوم) الصادرة من معالجة المخلفات الإلكترونية (E-waste)

وحدة رقم (2): تقييم أفضل التقنيات المتاحة / أفضل الممارسات البيئية لإدارة ومعالجة النفايات الإلكترونية المحتوية على الملوثات العضوية الثابتة



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# BAT/BEP

- Formalization of 8 informal companies
  - 8 ESIA studies issued
  - 1 operational licenses



# BAT/BEP

- About 7,091 tons of E-waste was re-directed to formal recyclers active in the country. This corresponds to a reduction of about **670.2 kg of c-PBDE** & **5.96 g-TEQ**.





# BAT/BEP

- About 800 tons of CRT existing in Egyptian ports waste will be exported to Greece for Safe disposal



# Capacity Building/ Awareness Raising

- Training on the issue of POPs /toxic metals in E-waste (558 trainees)
- awareness raising workshop on ESM of E-waste(2489 participants)





Medical and Electronic Waste Management Project

# Capacity Building/ Awareness Raising

➤ campaign aimed at creating awareness on E-waste






مفهوم إدارة المخلفات الطبية والإلكترونية

ترشيد استهلاك الأجهزة الإلكترونية



رشد استهلاكك وقلل مخلفاتك  
الإلكترونية حفاظاً على بيئتنا  
وصحتنا



اتخلص منها صح تعيش صح  
المخلفات الإلكترونية خطر يهدد حياتك

E-TADWEER (E-waste Awareness)






مفهوم إدارة المخلفات الطبية والإلكترونية

إعادة استخدام الأجهزة الإلكترونية



حافظ على مواردك الطبيعية  
بإعادة استخدام أجهزتك القديمة  
أو اجزائها السليمة



اتخلص منها صح تعيش صح  
المخلفات الإلكترونية خطر يهدد حياتك

E-TADWEER (E-waste Awareness)





# Capacity Building/ Awareness Raising

➤ campaign aimed at creating awareness on E-waste






المخاطر البيئية  
والصحية للمخلفات  
الإلكترونية



حافظ على صحتك من الرصاص  
والزئبق وباقي المواد الخطرة في  
المخلفات الإلكترونية واتخلص  
منها بالمصانع الرسمية



اتخلص منها صح تعيش صح  
المخلفات الإلكترونية خطر يهدد حياتك

E-TADWEER Mobile Application






تدوير  
المخلفات الإلكترونية



تدوير المخلفات يساعدنا نرجع  
المعادن النفيسة وكمان نتخلص من  
الأجزاء الخطرة بشكل آمن وكده  
ينساهم في تنمية صناعة بلدنا  
واقصداها ونحافظ على بيئتنا



اتخلص منها صح تعيش صح  
المخلفات الإلكترونية خطر يهدد حياتك

E-TADWEER Mobile Application

# Capacity Building/ Awareness Raising

- Launching E-Tadweer campaign for collecting E-waste from household



E-waste  
**TADWEER**



# National policy/ Regulatory framework

- A ministerial decree was issued in April 2019 to establish a national committee to oversee E-waste management issues on the national level and recommend any regulatory or institutional reforms
- A policy framework on ESM of E-waste



# Thank you

