



# *Electrical and Electronic Equipment in the circular economy*

*Good practice in Greece*



*General picture:*





## EEE sector





## National Strategy and "Circular Economy" Implementation on EEE

Design and production  
of EEE

Priorities in the main WEEE  
(prevention of WEEE)

New regulations for the manufacture of  
environmentally friendly appliances regarding energy  
consumption and the repair - re-use potential



European Commission - Press release



### New rules make household appliances more sustainable\*

Brussels, 1 October 2019

In a continued effort to reduce Europe's carbon footprint and to make energy bills cheaper for European consumers, the Commission today adopted new eco-design measures for products such as refrigerators, washing machines, dishwashers and televisions. Improving the ecodesign of products contributes to implementing the 'Energy efficiency first' principle of the [EU's Energy Union priority](#). For the first time the measures include requirements for repairability and recyclability, contributing to circular economy objectives by improving the life span, maintenance, re-use, upgrade, recyclability and waste handling of appliances.

European Commission Vice-President for Jobs, Growth, Investment and Competitiveness Jyrki **Katainen** said: "Whether it is by fostering repairability or improving water consumption, intelligent eco-design makes us use our resources more efficiently, bringing clear economic and environmental benefits. Figures speak for themselves: these measures can save European households on average €150 per year and contribute to energy savings equal to annual energy consumption of Denmark by 2030. It is with concrete steps such as these that Europe as a whole is embracing the circular economy to the benefit of citizens, our environment and European businesses."

European Commissioner for Climate Action and Energy, Miguel **Arias Cañete** said: "Together with smarter energy labels, our eco-design measures can save European consumers a lot of money, as well as help the EU reduce its greenhouse gas emissions. Eco-design is therefore a key element in the fight against climate change and a direct contribution to meeting the goals set in the Paris Agreement. As we move towards our long-term goal of a fully decarbonised EU by 2050, our energy efficiency and eco-design strategy will become ever more important".

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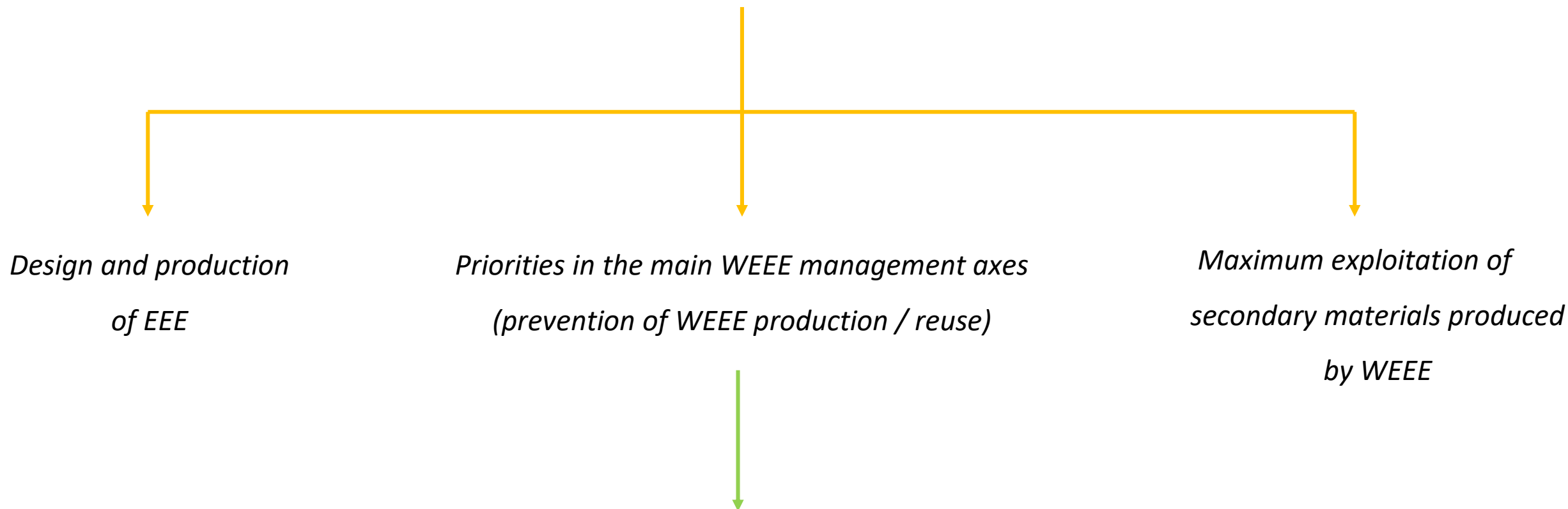
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*For the first time the measures include requirements for repairability and recyclability, contributing to circular economy objectives by improving the life span, maintenance, re-use, upgrade, recyclability and waste handling of appliances.*

- *"...these measures can save European households on average €150 per year and contribute to energy savings equal to annual energy consumption of Denmark by 2030..."*
- *"...The new, ambitious, ecodesign requirements on improving resource efficiency are a tool to ensure that all actors play by the same rules and advance the Circular Culture concept..."*

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## *National Strategy and "Circular Economy" Implementation on EEE*



ReWeee



# *Good practice in Greece*

With the contribution of  
European Union  
LIFE Programme



# ReWeee

LIFE14 ENV/GR/000858

*Circularity in practice*



appliances  
recycling s.a.



Ε.Ο.Α.Υ.  
Εθνική Οργάνωση Ανακύκλωσης



Ecological Recycling Society



GREEN FUND



Harokopio University  
of Athens



COLLECTORS  
WASTE COLLECTION SYSTEMS ASSESSED  
AND GOOD PRACTICES IDENTIFIED



ΔΗΜΟΣ ΘΕΣΣΑΛΟΝΙΚΗΣ

**Project Title**

“Development and Demonstration of Waste Electrical & Electronic Equipment (WEEE) Prevention and Reuse Paradigms”

**Implementation Duration**  
January 2016 – August 2020

**Project Objective**

WEEE reduction and reuse strategy  
implementation

**Total Budget**

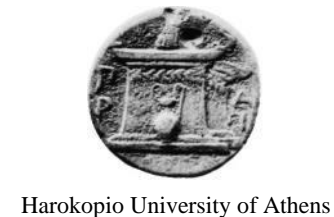
2.161.405 €

EC contribution 60%

LIFE+ Environment

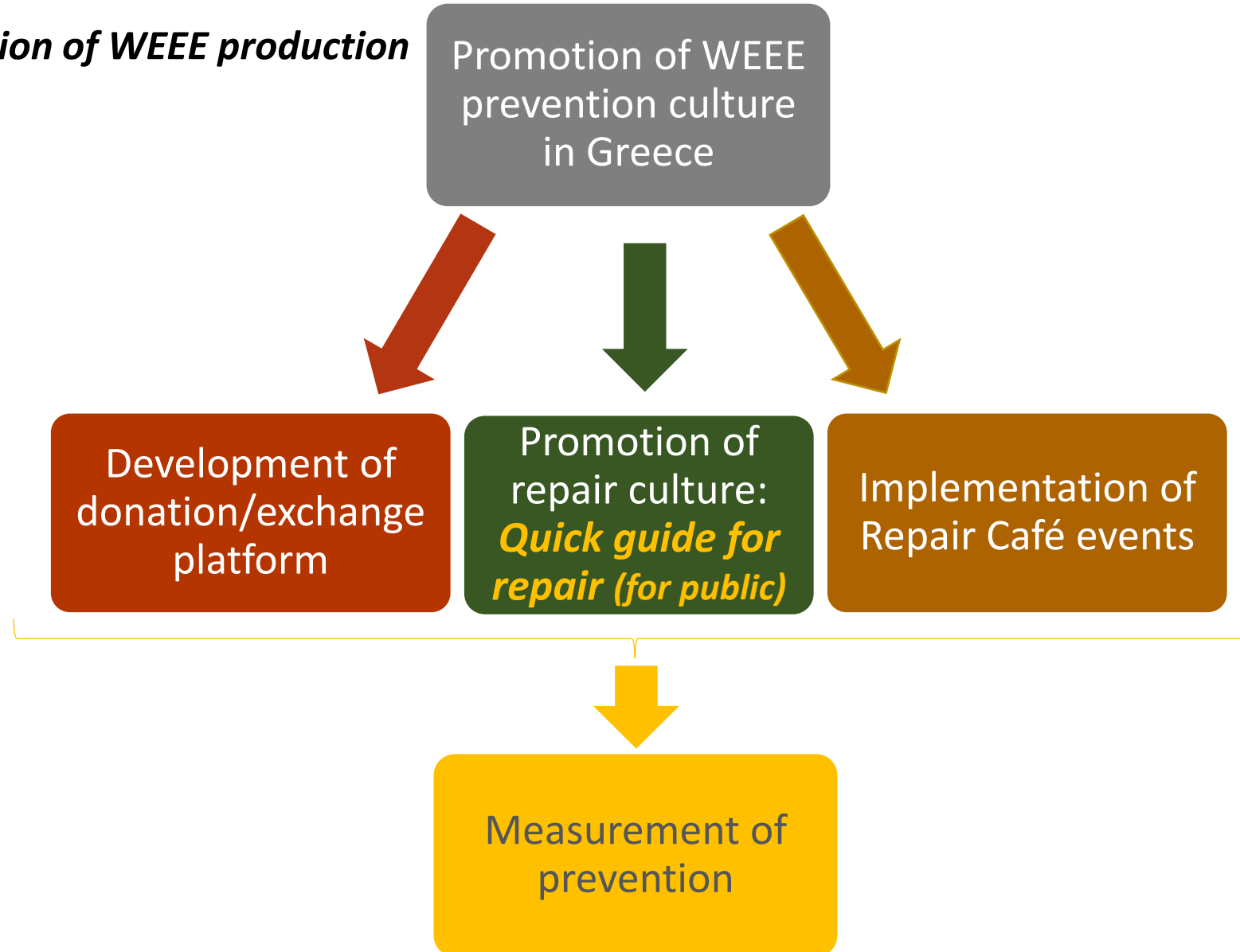
**Action Areas**

- Greece
- Belgium

**Coordinator Beneficiary****Co-Beneficiaries**



***Activities for prevention of WEEE production***



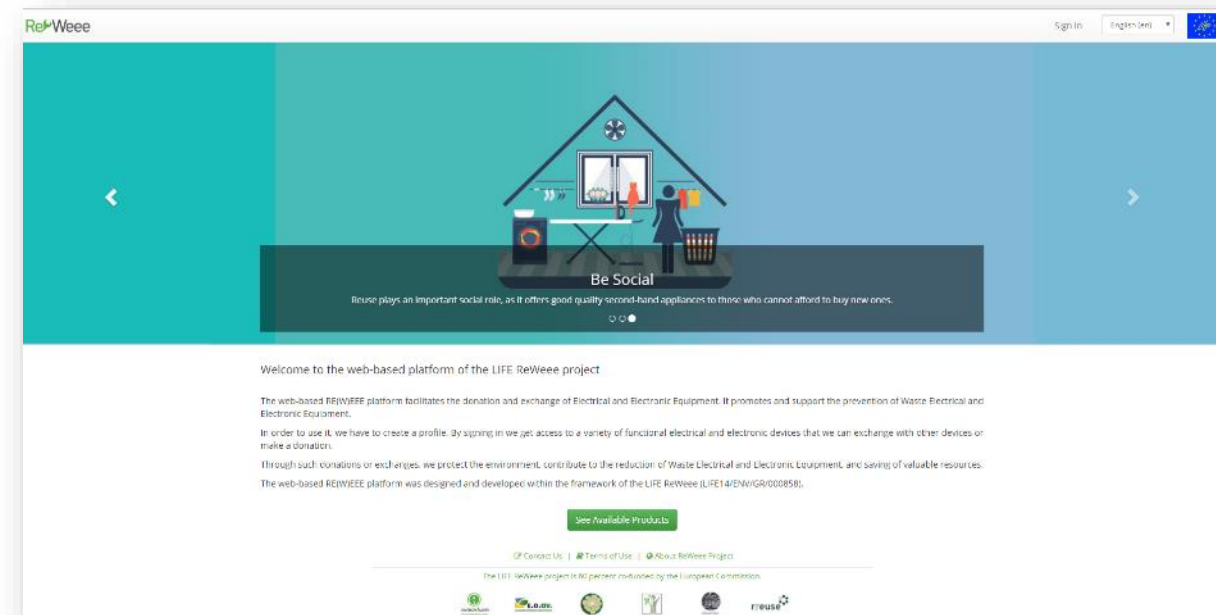
## Activities for prevention of WEEE production

Promotion of WEEE  
prevention culture  
in Greece



Development of  
donation/exchange  
platform

<https://reweee.hua.gr/en/>





Βήμα 2°: Αποσυναρμολογούμε το εξωτερικό μεταλλικό κάλυμμα του Η/Υ.



Βήμα 3°: Αποσυναρμολογούμε το τροφοδοτικό από το πλαίσιο – σκελετό του Η/Υ και αποσυνδέουμε τα καλώδια σύνδεσης με τα άλλα εξαρτήματα.



Promotion of  
repair culture:  
*Quick guide for  
repair (for public)*

[www.reweee.gr](http://www.reweee.gr)

gr/el/attachments/synoptikos-odigos-episkeyon-kat-oikon

ReWeee

Ελληνικά English



Ανάπτυξη και επίδειξη μοντέλων πρόληψης και  
επαναχρησιμοποίησης Αποβλήτων Ηλεκτρικού και Ηλεκτρονικού  
Εξοπλισμού (ΑΗΗΕ)

Αρχική Η Ομάδα μας Το ReWeee Ενημερωτικό Υλικό Χρονοδιάγραμμα Τα Νέα Μας **Παραδοτέα Έργου** Photo Gallery Σχετικοί Σύνδεσμοι Επικοινωνία

## Συνοπτικός Οδηγός Επισκευών Κατ' Οίκον

B6.2\_Οδηγός Επισκευής Κατ' Οίκον\_Εισαγωγή.pdf

B6.2\_Συνοπτικός Οδηγός Επισκευών Κατ' Οίκον\_1\_Σταθμός Ηλεκτρονικού Εξοπλισμού.pdf

B6.2\_Συνοπτικός Οδηγός Επισκευών Κατ' Οίκον\_2\_Σταθμός Ηλεκτρονικού Εξοπλισμού - Λειτουργία.pdf

B6.2\_Συνοπτικός Οδηγός Επισκευών Κατ' Οίκον\_3-4\_Smartphone.pdf

B6.2\_Συνοπτικός Οδηγός Επισκευών Κατ' Οίκον\_5\_Εξωτερικός Στερεοφωνικός Δίσκος - Hard Drive.pdf

B6.2\_Συνοπτικός Οδηγός Επισκευών Κατ' Οίκον\_6\_Οθόνη Ηλεκτρονικού Εξοπλισμού.pdf

B6.2\_Συνοπτικός Οδηγός Επισκευών Κατ' Οίκον\_7\_Δρομολογητής Δικτύου - Router.pdf

B6.2\_Συνοπτικός Οδηγός Επισκευών Κατ' Οίκον\_8-9-10\_Καλώδια - Ρευματοδότης.pdf



## Activities for prevention of WEEE production



Promotion of WEEE prevention culture in Greece



Implementation of Repair Café events

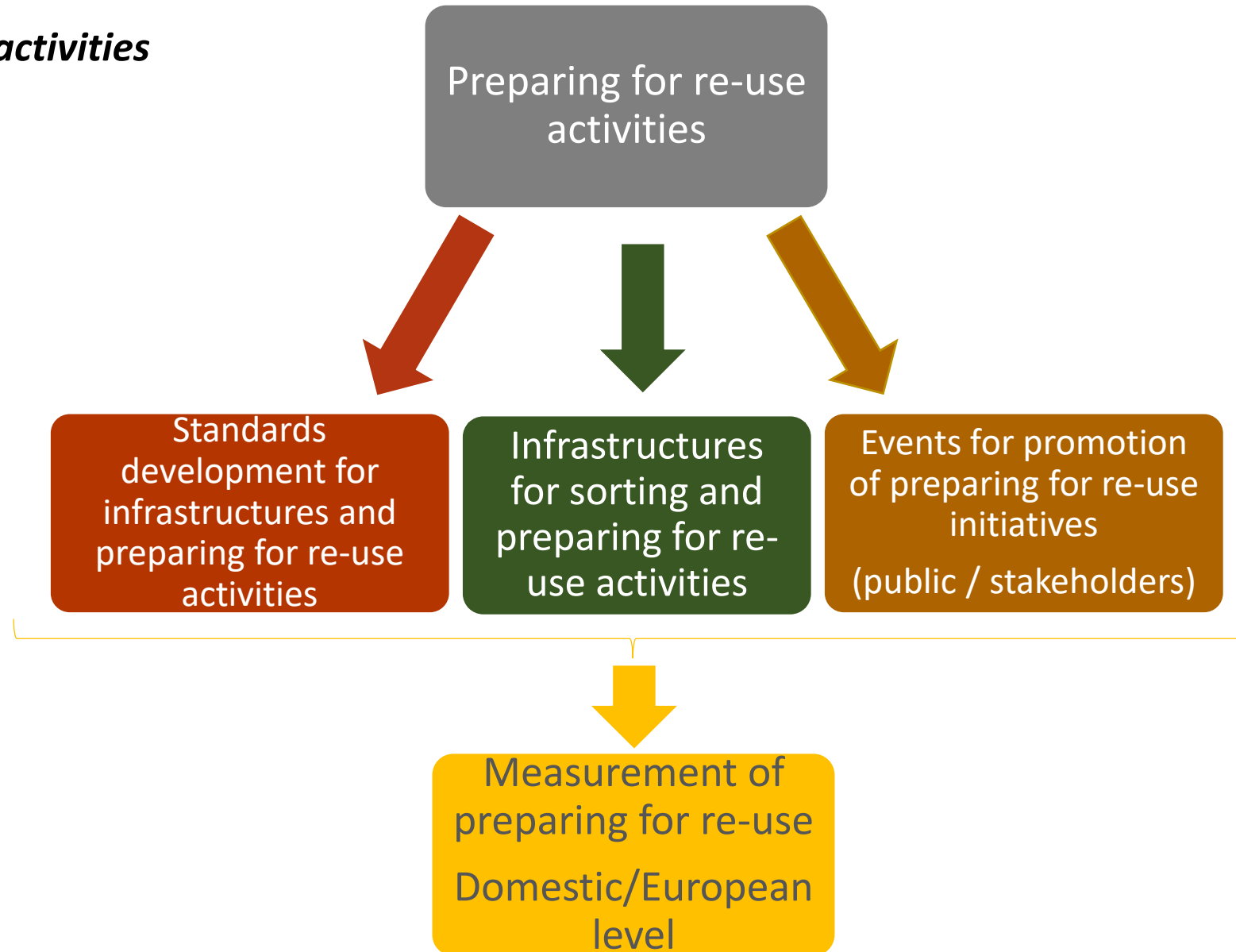
**7 Repair Cafés till today**



**313 devices were brought in for repair:**

- ✓ **222 were fixed or could be repaired with spare parts**
- ✓ **91 irreparable**



*Preparing for re-use activities*

## Preparing for re-use activities

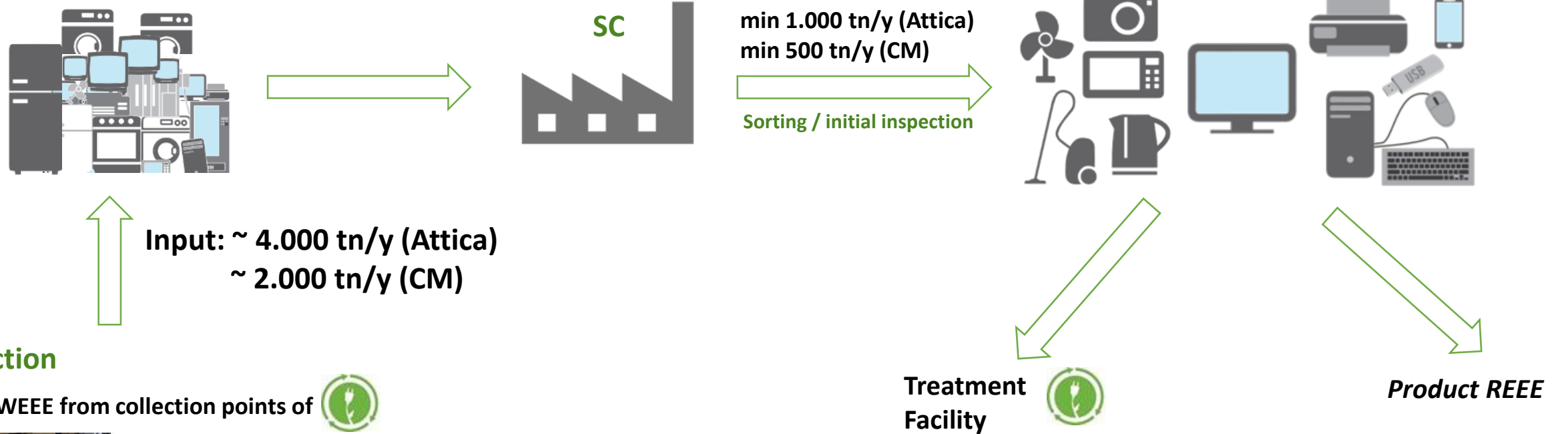
### Preparing for re-use activities

- ✓ Development of 2 Sorting Centers (SCs) of WEEE in Attica and Central Macedonia for the first time in Greece
- ✓ 1 year operation within the LIFE RE-WEEE project duration for data collection and evaluation
- ✓ At least 5 years of the SCs operation (“After Life”)
- ✓ Training activities for SCs’ employees
- ✓ Potential preparing for re-use of all WEEE categories, except Lamps
- ✓ Pilot operation: Public – Private cooperation



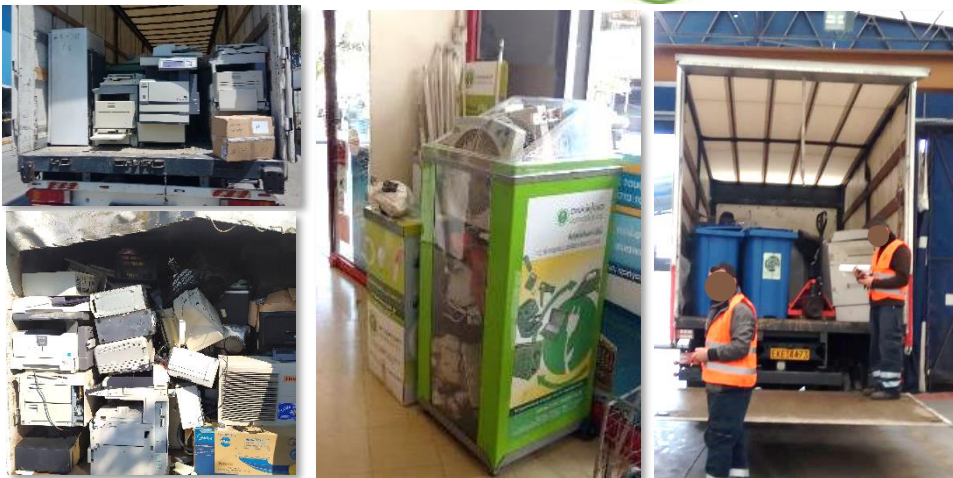
Mixed WEEE to be sorted to  
Categories set by WEEE Legislation

WEEE for preparing for re-use activities



## Collection

Mixed WEEE from collection points of



Sorting to WEEE  
categories:



Sorting to WEEE categories and  
initial inspection:



Activities		
Sorting:	<ul style="list-style-type: none"><li>- WEEE Handling – Loading / Unloading</li><li>- Load inspection</li><li>- Categorization in the WEEE categories (according to KYA 23615/651/E.103/2014)</li><li>- Weighting</li></ul>	
Preparing for re-use:	<ul style="list-style-type: none"><li>- Sorting of WEEE driven for treatment or preparing for re-use activities – visual inspection</li><li>- Initial Inspection</li><li>- Functional tests</li><li>- Data erasing</li><li>- Software removal / installation</li><li>- Repair</li><li>- Repeat tests</li><li>- Cleaning</li></ul>	
Put on the market / donation	<ul style="list-style-type: none"><li>- Packaging</li><li>- Product guarantee</li></ul>	

Reporting

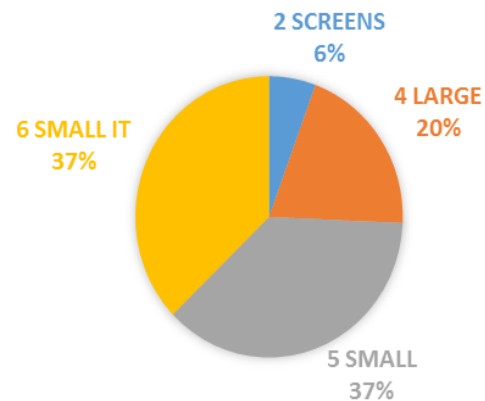




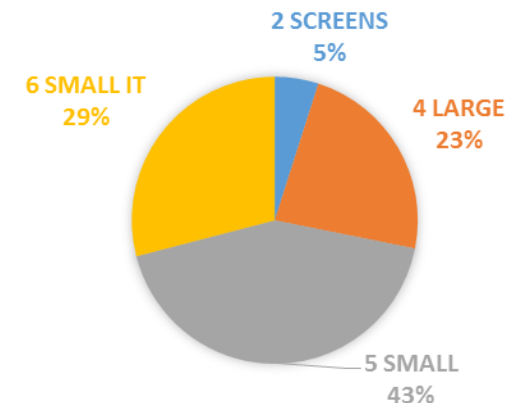
Feb – Sep 2019: Data analysis

Total Input: 2.644.324 Kg				
SORTED CATEGORIES OF LEGISLATION (CATEGORIES OF INTEREST TO BE INSPECTED VISUALLY)	INITIAL INSPECTION		FURTHER INSPECTION	
	FAIL (BACK TO WEEE TREATMENT / RECYCLING)	SECOND PHASE OF VISUAL INSPECTION/ PASS TO FURTHER INSPECTION	WEEE QUANTITIES PASSED FROM INITIAL INSPECTION (TO BE FURTHER INSPECTED)	FAIL (BACK TO WEEE TREATMENT / RECYCLING)
(Kg)	694.486	660.318	6.201	654.117
%	51%	49%	0,94%	99,06%
Total	1.354.804		660.318	

Visual inspection (PASS)



Further inspection (PASS)



Operation from 4/2/2019

*Infrastructures:*



*Activities:*



Reception



Sorting for treatment



Sorting for initial inspection



Activities:



Sorting for initial inspection

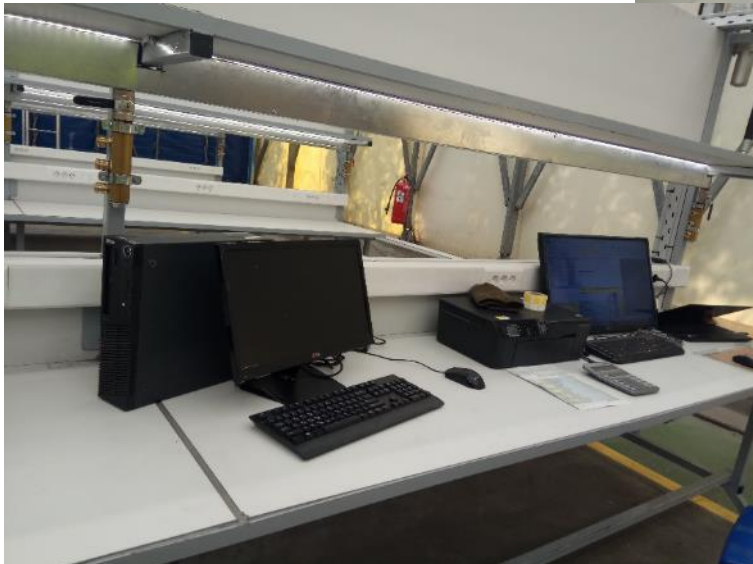


Weighting





*Activities:*



Initial inspection



WEEE pending for further preparing for re-use activities

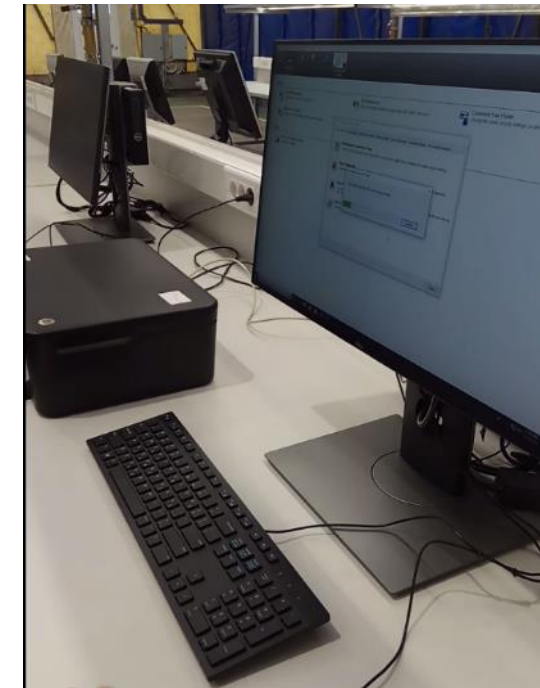
Activities:



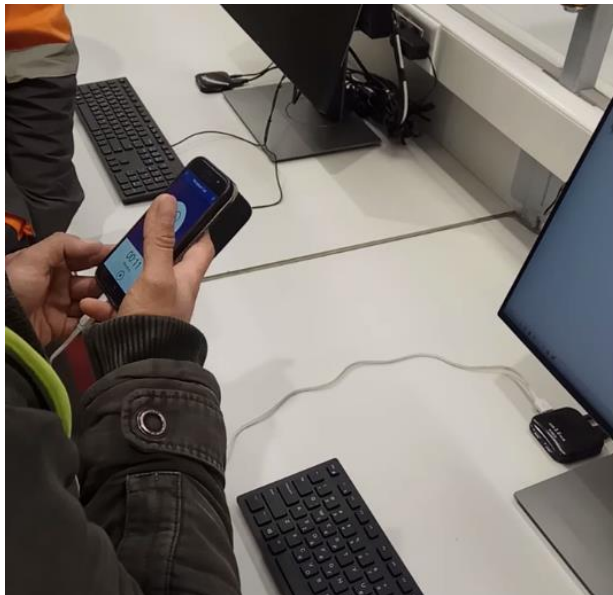
Screen check



Data eradication



Printer check



Mobile check



Hardware check



### Activities:



Functional tests /  
Repair



Operation from 15/7/2019

**Equipment:** Co-financed by the



**Infrastructures:**





*Infrastructures:*

*Outdoor area*



*Weighting area*



*Storage area*



*Receiving / Sorting area*





*Infrastructures:**Load receiving**Sorted WEEE pending for further preparing for re-use activities*

### Infrastructures:

*Further preparing for re-use activities (started on 1/10/2019)*





### *National Strategy and "Circular Economy" Implementation on EEE*

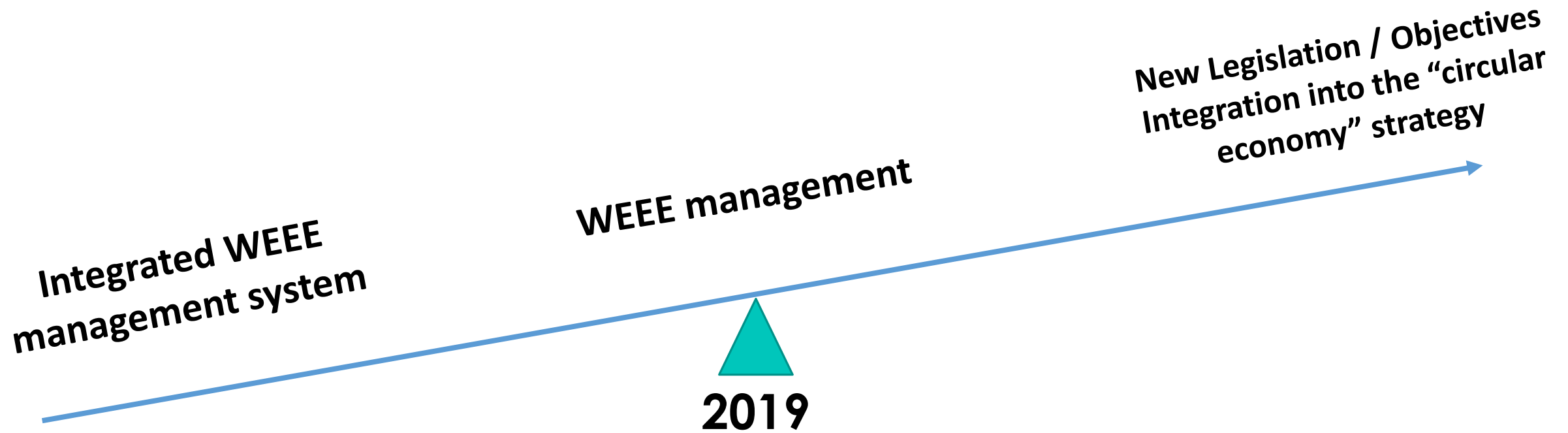
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- *Possible adoption of measures for Eco designed device access (market) by consumers*
- *Implementation of a Public–private partnership model (with the contribution of Local Authorities) for the operation of the Sorting Centers infrastructures for the prevention of WEEE production and WEEE potential reuse*
- *Financial incentives for companies selling REEE (reduced taxation)*
- *Strengthening and facilitating the development of investments for the management of specific waste streams (e.g. WEEE-generated plastic parts, hazardous wastes)*
- *Integration of the produced specific materials as secondary materials in the production process of industries (e.g. glass from TV screens to be used in the cement industries) with explicit authorization progress*





*Thank you for your attention*



## 1. New Legislation / WEEE management targets

