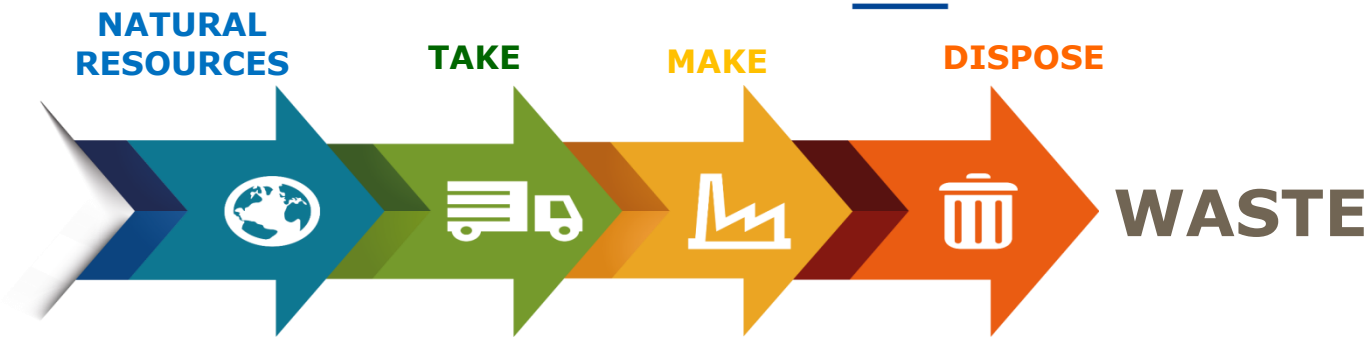
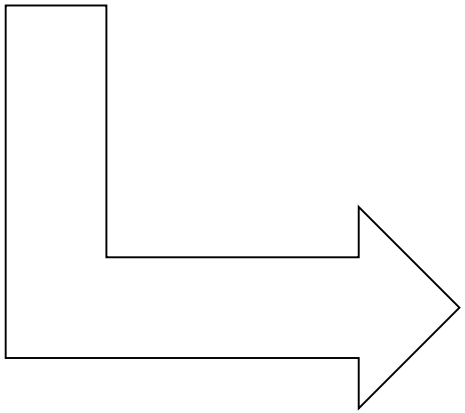
Completing the Circuit:
Electronic Products in a European Circular Economy
ECOS
28 June 2017, 13:00 - 17:30
Renaissance Hotel, Brussels
#CircularEconomy
@ECOS_Standard

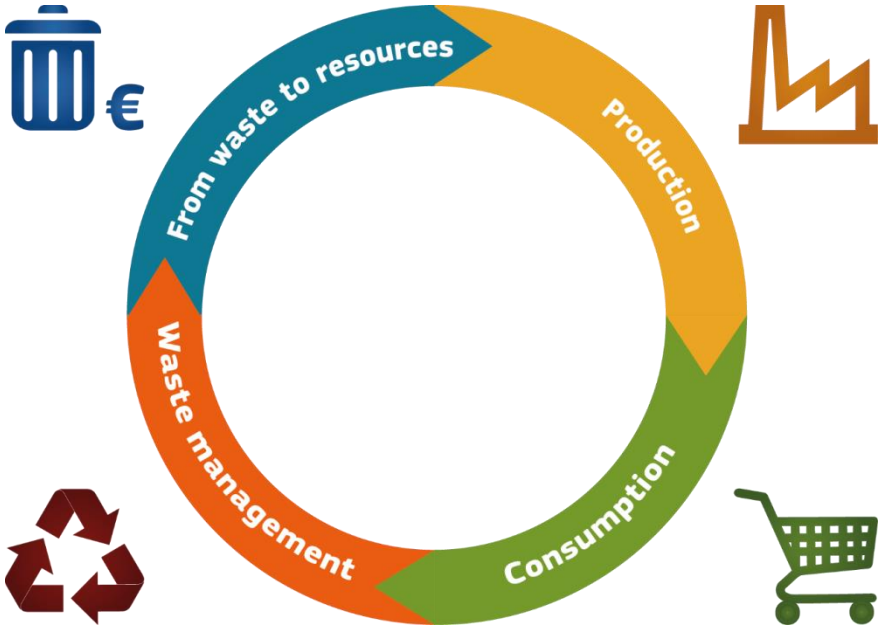
European Commission

Circular Economy and Digitalisation

Pierre Henry
European Commission
DG Environment


NATURAL RESOURCES
TAKE
MAKE
DISPOSE
WASTE




From waste to resources
Production
Consumption
Waste management

Circular Economy: a priority

4 Key areas of action

5 Priority sectors

2017- What's coming?

Monitoring Framework

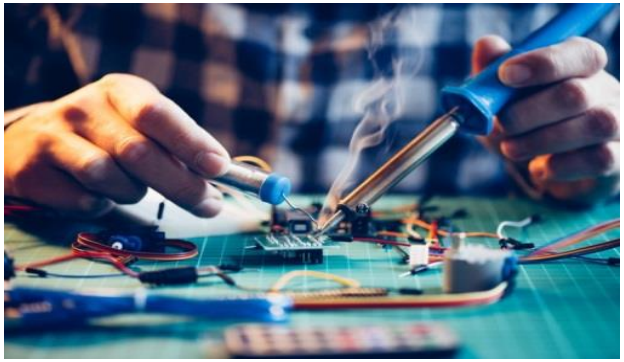
Plastics Strategy

Legislative proposal to promote water reuse

Interface product-chemical-waste legislation

Sustainable Consumption and Production

Ecodesign Working Plan 2016-2019



BREFs for industrial sectors

Helping consumers and public authorities choose sustainable products and services

EU Ecolabel
www.ecolabel.eu
25 YEARS

Revised legislative proposals on waste

65% target recycling **municipal waste** by 2030

10% target to reduce **landfill** of municipal waste by 2030

75% target recycling **packaging waste** by 2030

- **One calculation method**
- **Prevention**
- **Simplification**

Investments and funding

Circular Economy Finance Support Platform: Awareness of circular economy business logic & uptake of circular economy projects by investors

Horizon 2020: Industry 2020 in the circular economy

Cohesion policy: Innovation through smart specialisation

LIFE: Over EUR 100 million

EFSI 2.0 expected to mobilise **EUR 500 billion**

Electronic products and Circular Economy

- Ecodesign and energy labelling
  - ➔ Specific study on ICT products
- WEEE management and recycling
  - ➔ Article 15 of WEEE Directive on information exchange
- RoHS scope review proposal
  - ➔ Facilitating EEE reuse and remanufacturing
- Priority on Critical Raw Materials

Extending life-cycle of products

- Smarter design
- Predictive maintenance, increased reparability
- Reuse, refurbishment, remanufacturing
- Internet of Things
- New business models

European Commission

Learn more about the Circular Economy

http://ec.europa.eu/environment/circular-economy/index_en.htm

European Commission

Material efficiency in Ecodesign

Completing the circuit: Electronic products in a European circular economy
28 June 2017, Brussels

European Commission
Directorate General Energy
Energy Efficiency

Energy

Directive 2012/19/EU (WEEE):

Recital 11 suggests "Ecodesign" measures to tackle upstream the issues that WEEE has to manage downstream;

Article 4 explicitly refers to Ecodesign as mean to establish the rules for facilitating re-use and appropriate treatment of WEEE.

Directive 2009/125/EC (Ecodesign)

Provides an extensive framework to cover non only energy-related but also other aspects of environmental performance.

Confirms complementarity with the WEEE.

Annex I+II list a number of relevant aspects to consider.

Refers to standards "to help manufacturers in applying the implementing measures"…

M/543 – standardisation request on ecodesign requirements on material efficiency aspects

GOALS:

a. Extending product lifetime.
b. Ability to re-use components or recycle materials
c. Use of re-used components and/or recycled materials in products

DELIVERABLES (main, methods to):

a. Assessing durability, upgradability and ability to repair, re-use and re-manufacture of products
b. Ability to access or remove components to facilitate:
    a. repair/remanufacture/reuse (*disassembling*)
    b. extraction at end-of-life (*dismantling,* for recycling)
c. Reusability/recyclability/recoverability (RRR) indexes or criteria
d. Documentation and/or marking

European Commission

Ecodesign measures on electronic products

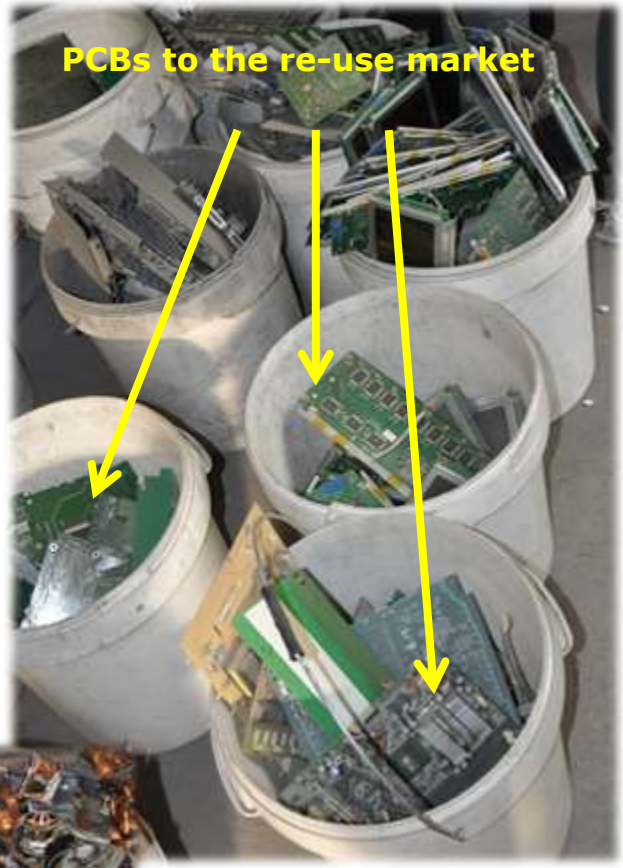
1. Televisions review (R. 642/2009 & 1062/2010)
2. Computers review (R. 617/2013)
3. Server (new)

First clear efforts to cover "circular-economy" related aspects:

1. Disassembling/dismantling of some of the components, facilitating separation of components listed in the WEEE-Annex VII
2. Marking of plastic parts, in particular those with BFR
3. Labelling batteries (e.g. content, durability)
4. Labels for toxic/ecotoxic substances (still allowed by REACH)
5. Information requirements relevant for dismantling, re-use, recycling and recovery at end-of-life
6. Standardisation of components: EPSs – ED Annex I p. 1(f)

Disassembling/Dismantling: possible requirements

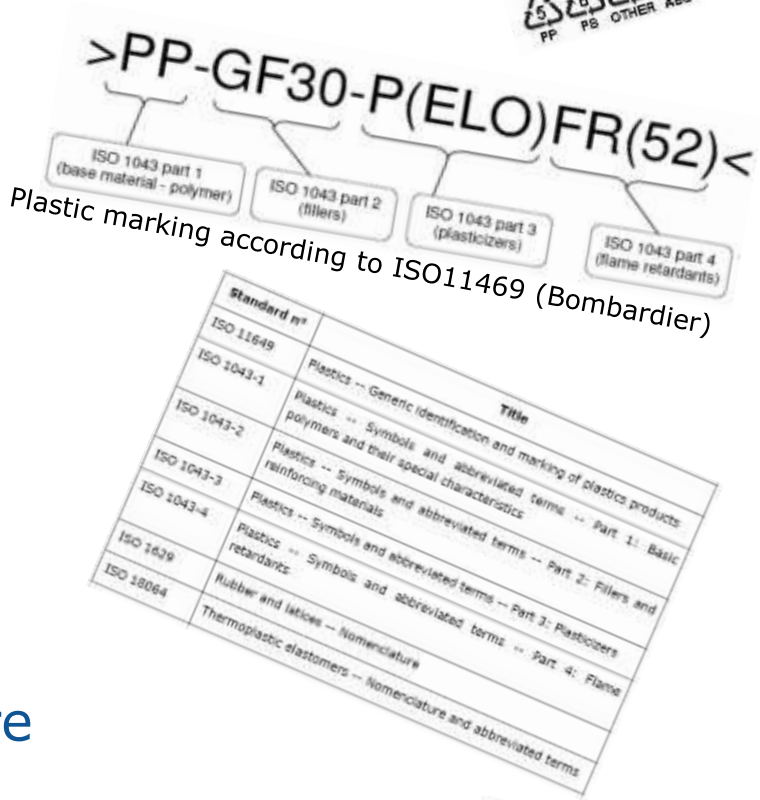
- Joining, fastening or sealing techniques not preventing the safe removal of components that WEEE requires to separate (*point 1 of Annex VII of Directive 2012/19/EU) when present*...
- Sequence of operations, tools or technologies needed to be documented
- Exemptions possible ?

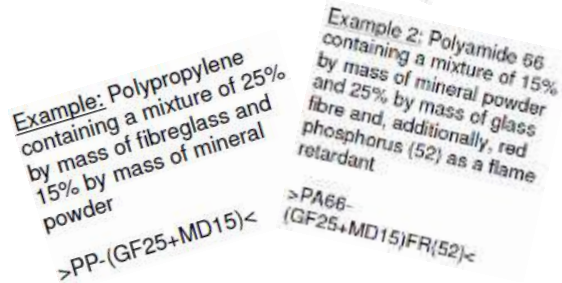


Plastic marking: possible requirements

Plastic parts heavier than … [50 or 100g]:

- Marked by specifying the type of polymer using the appropriate symbols and abbreviated terms as specified in available standards. The marking shall be legible.
- If flame retardants present, specific (additional) requirements (e.g. where are they, percentage, …)





Ecodesign measures on electronic products

Durability/reparability:

- For televisions and computer monitors the lifetime is rather function of the technology evolution (changes in size-ratio increase in resolution, contrast ratio and "perceived image quality" aspect)
- For computers lifetime extension is better perceived as a need, e.g. for portables, battery durability is a limiting factor, liquid spilling and fall/bumps a frequent cause of damage…

Lifetime:

- Standardised components: EPSs (USB-C in part.) now bringing new opportunities…

European Commission

Concluding…

- 29 Ecodesign implementing measure, covering about 40 products;
- Lack of metrics/standards for assessing material efficiency aspects and that should provide reliable, accurate and reproducible measurement procedures, not prohibitively expensive or imply lengthy tests;
- Standards should help provide "objective" and "verifiable" requirements.

The role of Ecodesign & Energy Label in driving the sustainable design and use of electronics

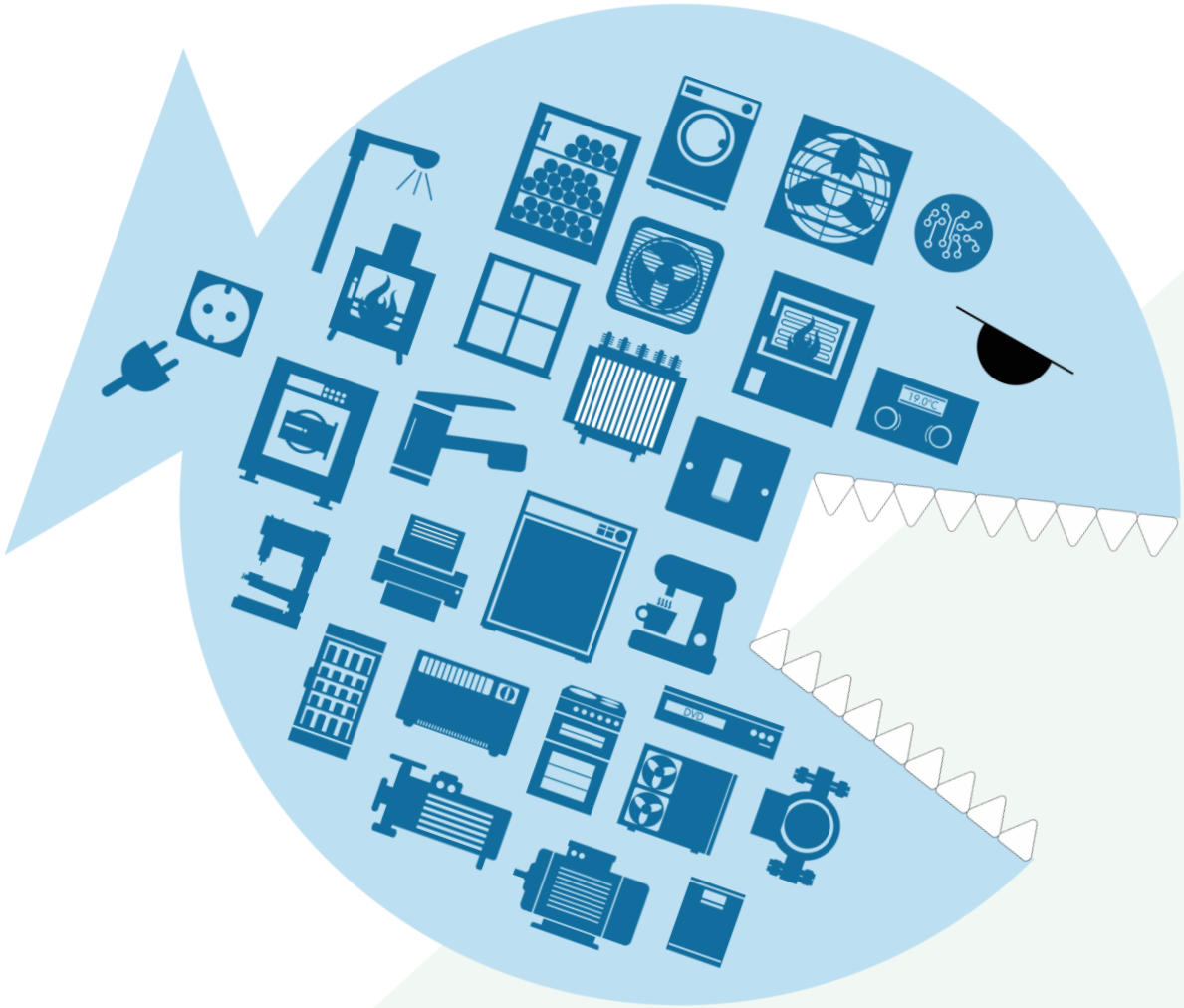
Chloé Fayole

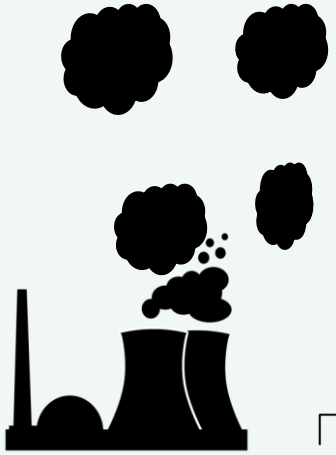
Ecodesign Policy Officer

28 June 2017

coolproducts
for a cool planet

A successful policy





ECOS

Resource-intensive electronics

Manufacturing a computer takes:

- 240kg fossil fuels
- 22kg chemical products
- 1,5t water

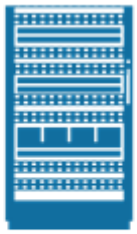
Source: UN

Production phase: 56% of the GHG emissions

Source: Öko-institut

ECOS

Ecodesign for durability, repairability and recyclability



Enterprise Servers

Computers

Displays

Mobile Phones

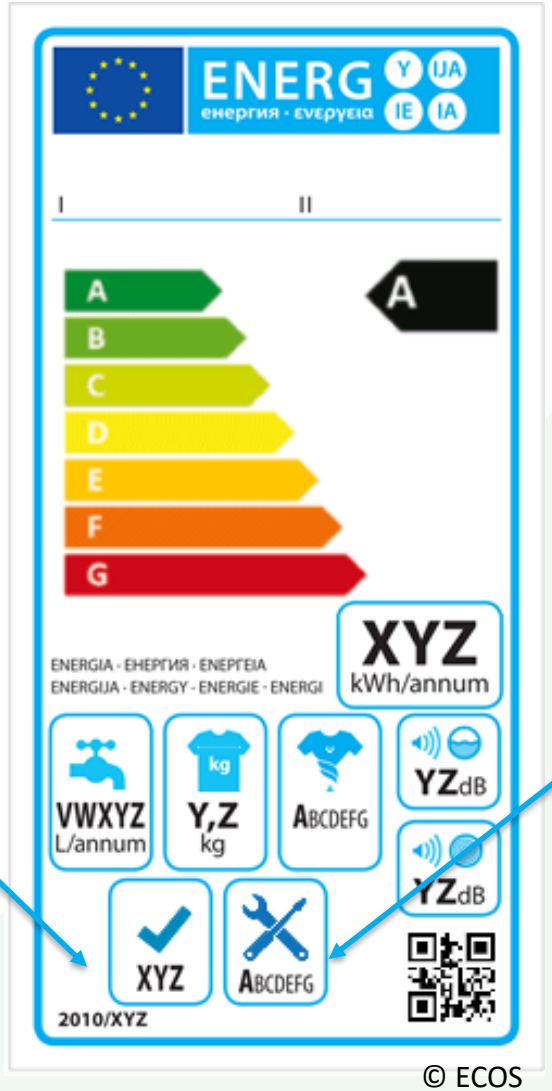
Possible requirements:

- Access to key components
- Repair manuals, spare parts available
- Availability of software updates
- Durability
- Removal of hazardous substances

ECOS

A label beyond energy

Free warranty period



Repair rating

© ECOS

ECOS

The next steps – ECOS calls for

- Regulating mobile phones, gateways and base stations
- Swiftly finalising the displays, computers and servers measures, maintaining the current level of ambition
- Developing inclusive material efficiency standards by March 2019
- Conducting an analysis on potential design requirements for non-energy related products (as requested per the Council)

ECOS

Chloé Fayole
Ecodesign Policy Officer

Mundo B, Rue d'Edimbourg 26
1050 Brussels, Belgium
+43 660 22 94 164
chloe.fayole@ecostandard.org
www.ecostandard.org

@ECOS_Standard

ECOS-EU

ECOS is co-funded by the European Commission and EFTA

BEUC The European Consumer Organisation

The Consumer Voice in Europe

The role of Europe in driving sustainable design – a consumer view

Annual ECOS Workshop

Brussels

28 June 2017

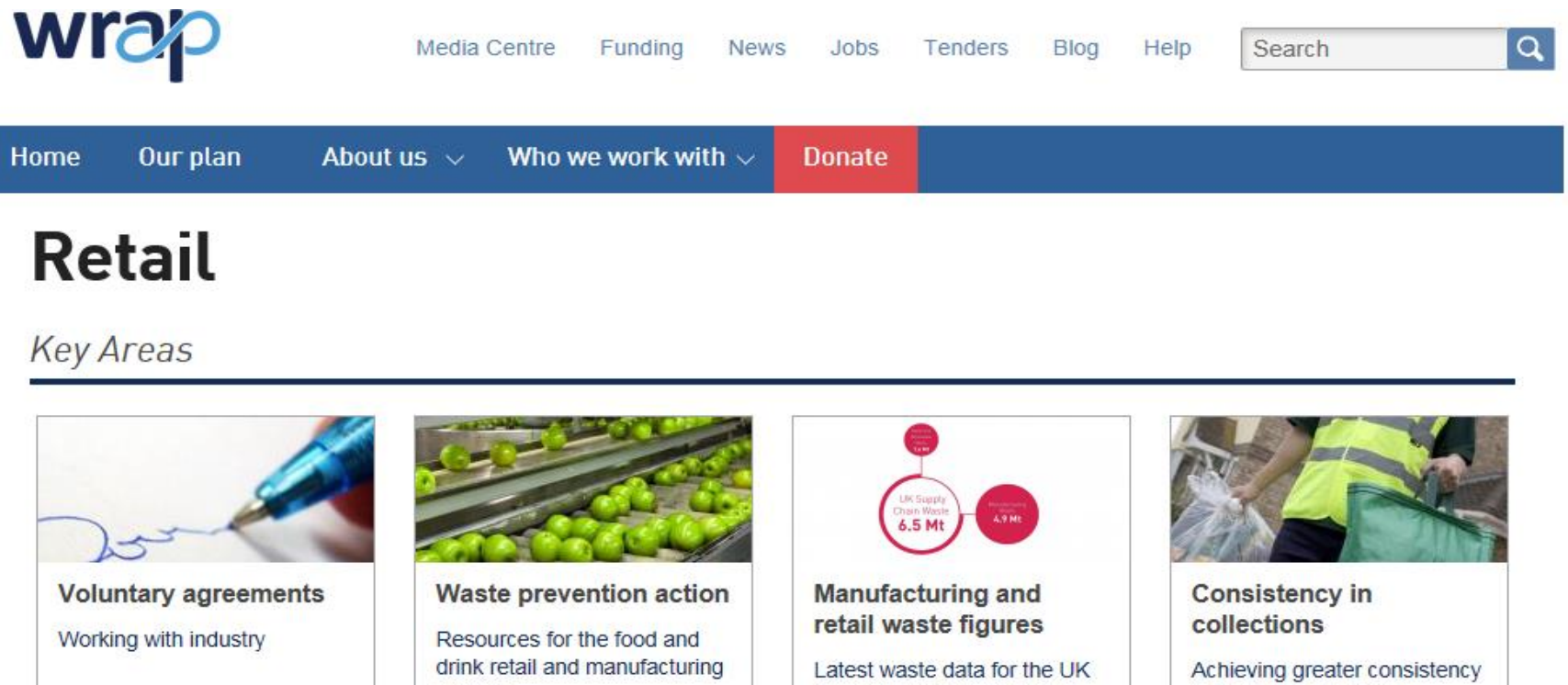
What more can be done by policy makers?

- Integrate product durability consistently into EU Ecodesign measures
- Include more products into the scope of Ecodesign with a primary focus on lifetime extension (e.g. Mobile phones)
- Improve consumer information on the expected lifetime of products
- Take steps to make sure that spare parts will be available at reasonable costs
- Reform legislation on legal guarantees

What more can be done by retailers?

- Apply for the EU Ecolabel: durability, upgradeability and longer commercial guarantees are often in the criteria

- Take durability into account into internal procurement rules;



What more can be done by consumers / consumer organisations? I

What more can be done by consumers / consumer organisations? II

Umfrage „Geplante Schwachstellen“

55 % meinen „Das hat System“

Fast 800 Betroffene haben bis Ende März an unserer Online-Umfrage teilgenommen. Den meisten Ärger gibt es mit Handys, Druckern und Waschmaschinen.

Nina Tröger, Harald Wieser und Renate Hübner

SMARTPHONES WERDEN HÄUFIGER ERSETZT ALS T-SHIRTS

Die Nutzungsmuster und Ersatzgründe von KonsumentInnen bei Gebrauchsgütern.

AK WIEN

WORKING PAPERS

VERBRAUCHERPOLITIK, VERBRAUCHERFORSCHUNG

Geplante Obsoleszenz

Dr. Renate Hübner

What more can be done by consumers/ consumer organisations? III

20.04.2017

Kaffeevollautomat, Staubsauger, Waschmaschine: Wann sich eine Reparatur lohnt

26 | 62 | f teilen | tweet | G+ teilen | Merken

Inhalt

1. Reparieren oder wegwerfen?
2. Kaffeevollautomaten
3. Tabelle: Kaffeevollautomaten – das sagt die Industrie
4. Staubsauger
5. Tabelle: Staubsauger – das sagt die Industrie
6. Waschmaschinen
7. Tabelle: Waschmaschinen – das sagt die Industrie
8. Ergebnisse unserer Leserumfrage
9. Selber reparieren: Diese Webseiten sind hilfreich
10. So sind wir vorgegangen: Ökobilanzen und Kostenanalysen

Artikel als PDF (12 Seiten)

© Thinkstock (M)

Wir haben erforscht, wann es sinnvoll ist, kaputte Haushaltsgeräte reparieren zu lassen. Für die Umwelt lohnt es sich öfter als für den Geldbeutel.

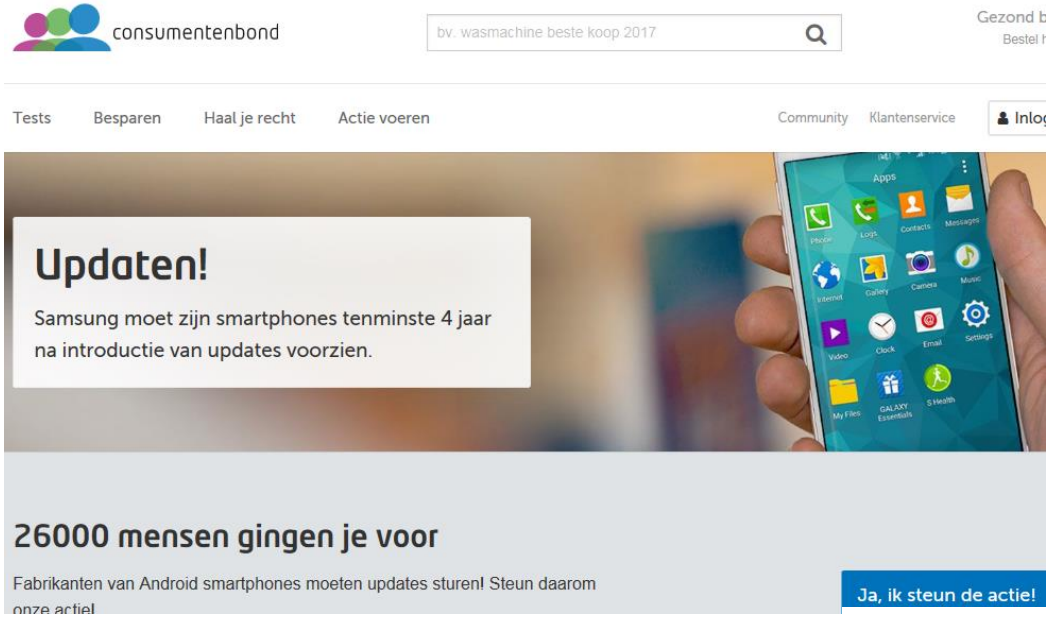
Als ein blankes Kabel ihren Staubsauger lahmlegte, musste Beate Lautenschläger nicht lange überlegen. Der Schaden sollte repariert werden. Sie schleppte den leblosen Bodenputzer zum Elektrohändler. „Der Verkäufer rechnete mir vor, dass die Reparatur mindestens 120 Euro kosten würde – dafür bekäme ich ein neues Gerät“, erinnert sich die Berlinerin. Sie ließ sich nicht beirren, sondern stellte den Todgeweihten einem Techniker des Reparaturcafés in ihrer Nachbarschaft vor. Nach einer halben Stunde war das Kabel verlötet und der Sauger wiederbelebt.

What more can be done by consumers/ consumer organisations? IV

© Thinkstock, Stiftung Warentest

What more can be done by consumers/ consumer organisations? V

What more can be done by manufacturers?



BEUC The European Consumer Organisation

The Consumer Voice in Europe

Thank you for your attention

www.beuc.eu

@beuc

Bureau Européen des Unions de Consommateurs AISBL | Der Europäische Verbraucherverband
Rue d'Arlon 80, B-1040 Brussels • Tel. +32 (0)2 743 15 90

Ross Bartley

Bureau of International Recycling

Trade & Environment Director

#CircularEconomy
@ECOS_Standard

ECOS

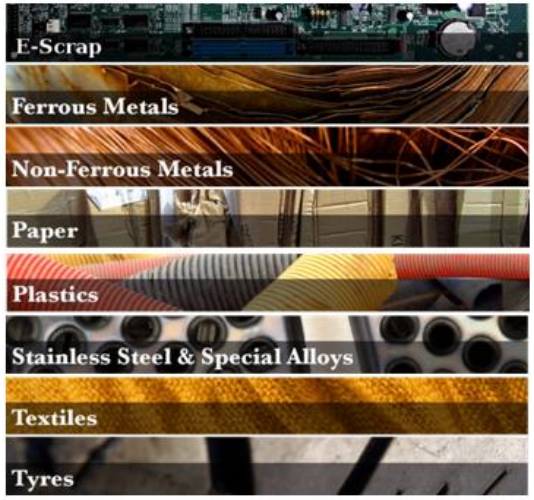
Around

800 BIR MEMBERS

all over the World!

35 NATIONAL *Federations*

(57.0 %) EU 27
(4.0 %) Other Europe & Russia
(9.0 %) USA & Canada
(2.0 %) Latin America & Carribbean
(2.0 %) Africa
(9.0 %) Turkey & Middle-East
(7.0 %) Indian subcontinent
(8.0 %) China, Japan & Other Asian
(1.0 %) Australia Pacific Rim



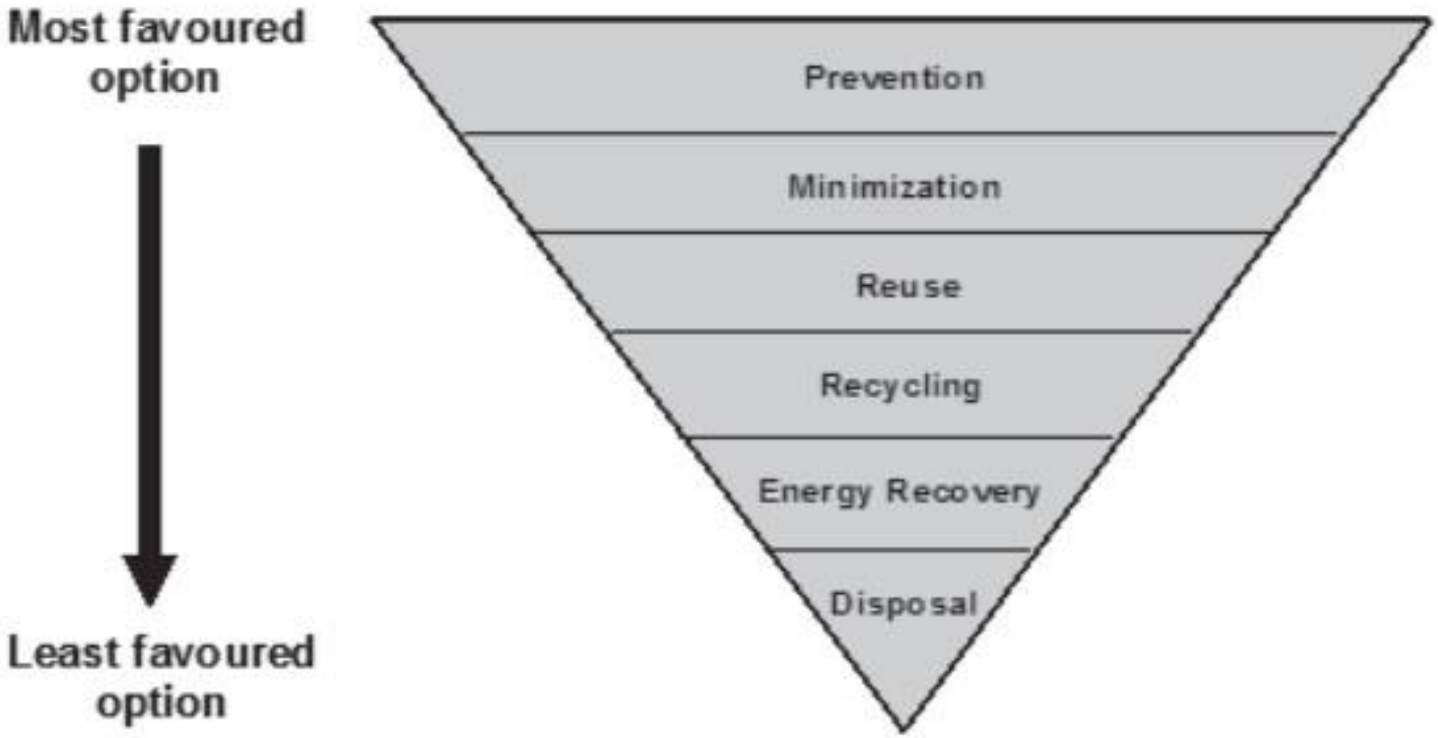
World Council of Recycling Associations inclusive of all 35 BIR affiliated national associations and federations

BIR – REPRESENTING THE FUTURE LEADING RAW MATERIAL SUPPLIERS

BIR (aisbl)
Avenue Franklin Roosevelt 24
1050 Brussels, Belgium

T. +32 2 627 57 70
F. +32 2 627 57 73

bir@bir.org
www.bir.org


Most favoured option
Least favoured option
Prevention
Minimization
Reuse
Recycling
Energy Recovery
Disposal

End-of-Life Vehicles – for spare parts

End-of-Life Electronic Equipment – for spare parts

used iphone 6 for parts | ×

Secure | https://www.ebay.com/sch/i.html?_from=R40&_trksid=p2047675.m570.l1311.R1.TR1.TRC0.A0.H0.Xused+iphone+parts.TRS0&_nkw=used+iphone+6+for+parts&_sacat=0

Original Loud Speaker parts For Apple iPhone 6 OEM

$5.99
Buy It Now

From United States

Customs services and international tracking provided

Original 100% Ear Piece Speaker Replacement Repair Part for iPhone 6S Plus 5.5"

$1.99
0 bids

21h left (Tuesday, 9AM)

From United States

Customs services and international tracking provided

Ear Speaker Bracket parts For Apple iPhone 6 OEM

$5.49
Buy It Now

From United States

Customs services and international tracking provided

Economics of recycling critical raw materials

EU Policies make a difference beyond the EU

- Very positive in adding material efficiency
- However Regulations do not go far enough
- Need requirements on recycled content
- Standards, yes but not discriminating against SMEs
- Design products for the environment that are also desirable, durable, repairable and ultimately recyclable

Panel 2

Sitting on a gold mine:

How re-use and recycling can integrate electronics in a circular economy

#CircularEconomy
@ECOS_Standard

ECOS

European Commission

European Commission
DG Environment

Sitting on a gold mine: How re-use and recycling can integrate electronics into a circular economy.

Brussels,
28 June 2017

Why to integrate electronics into a circular economy?

1. *Chemicals and heavy metals managed properly*

Substances contained in WEEE...

- Greenhouse gases
- Chlorinated fluorocarbons (CFCs)
- Heavy metals
- Certain flame retardants

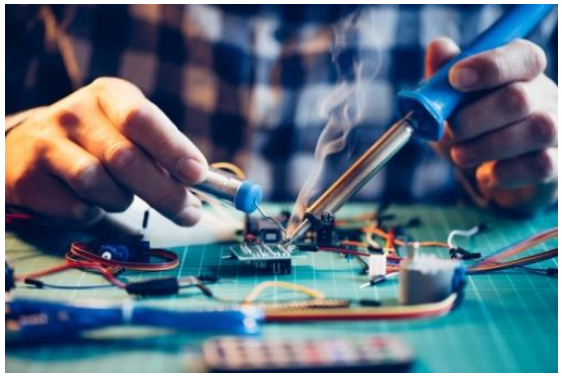
2. *Precious materials extracted*

3. *Keep WEEE out of landfills*

4 Key areas of action

Production

Ecodesign Working Plan 2016-2019



€ 490 savings on household energy bills each year

Energy savings equivalent to annual energy consumption of Italy by 2020 and of Sweden by 2030

Consumption

Helping consumers choose sustainable products and services

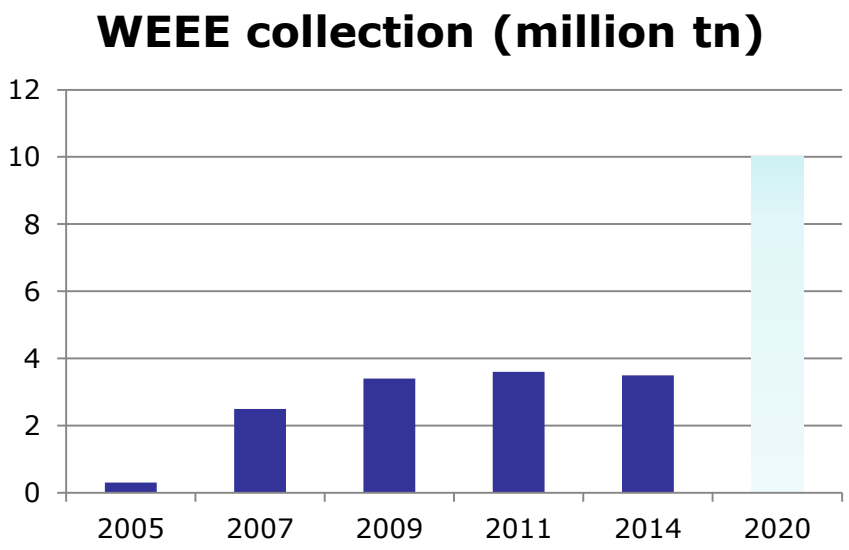
Encouraging Public Authorities choose more sustainable products and services.

Waste Management (WEEE Directive)

85% target **collection of WEEE generated** by 2019

65% target **collection of EEE put on market** by 2019

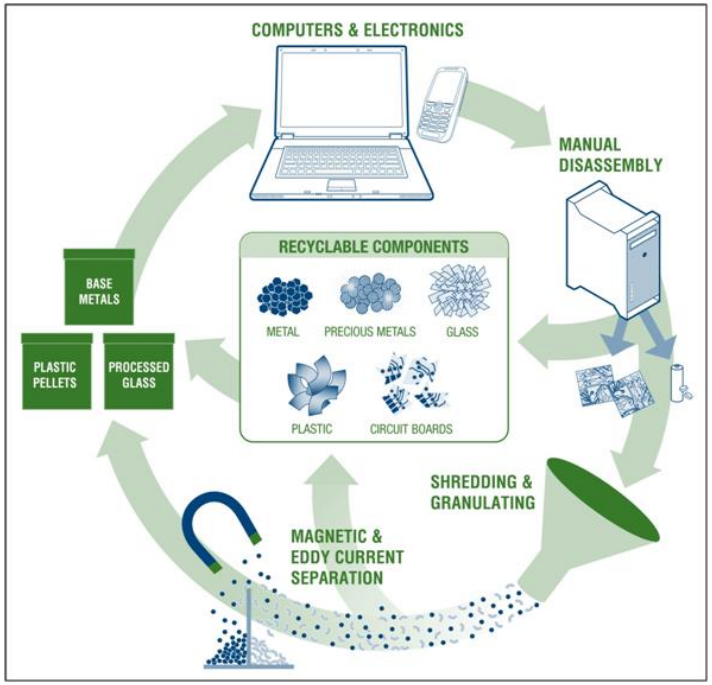
New **preparation for reuse & recycling** targets



Secondary Raw Materials

Turning waste into a resource

- Directive 2012/19/EU on WEEE
  - ✓ Article 8 and Annex VII
  - ✓ Producers set up systems to provide for the recovery of WEEE using BAT
  - ✓ Development of European Standards for the treatment of WEEE
- European Standards for the treatment of WEEE



Let's turn Europe into a more circular economy

Thank you!

European Commission
Directorate-General ENVIRONMENT
Directorate B - Circular Economy & Green Growth
ENV.B.3 - Waste Management & Secondary Materials

Waste streams team Coordinator: **Bettina Lorz**
(Bettina.LORZ@ec.europa.eu)
Your WEEE contact at the Commission: **Maria Banti**
(Maria.BANTI@ec.europa.eu)

Joan Marc Simon

Zero Waste Europe

Director

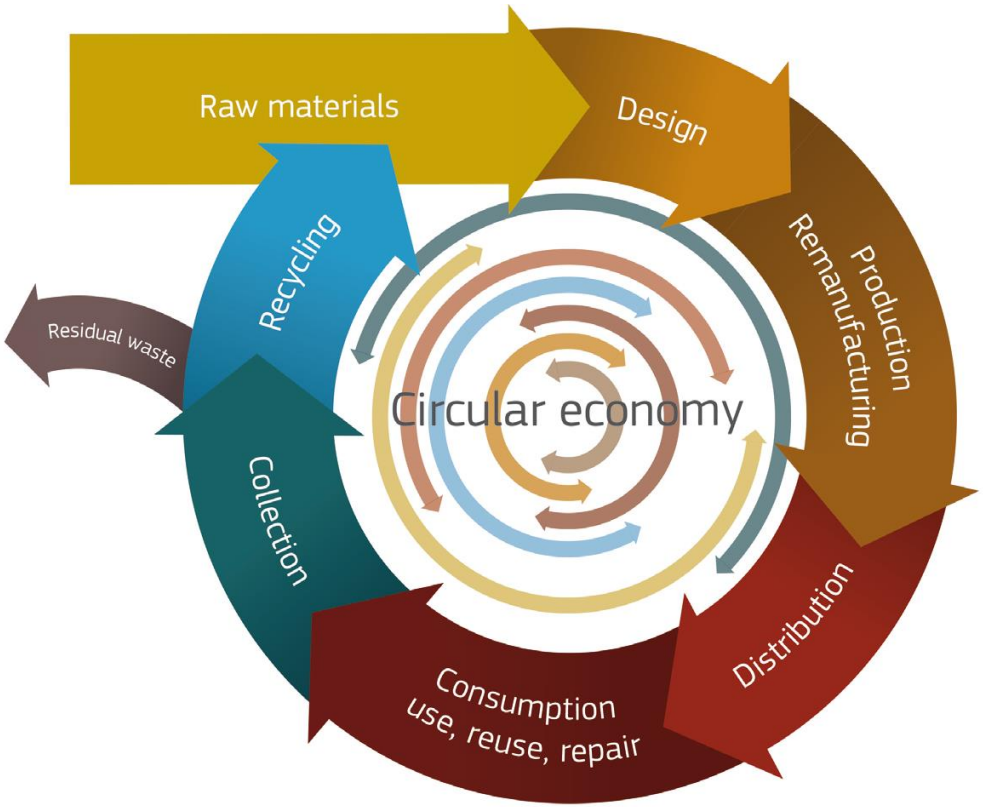
#CircularEconomy
@ECOS_Standard

Circular Economy:

Are we fooling ourselves with 'alternative facts'?

Norbert Zonneveld
Executive Secretary

Concept of Circular Economy



Circular economy systems **keep the added value** in products for as long as possible and eliminate waste

They **keep resources within the economy** when a product has reached the end of its life, so they can be productively used again and again and hence create future value

Source COM (2014) 398: "Towards a circular economy"

The classic theme

This time projected along the one dimensional economy axis

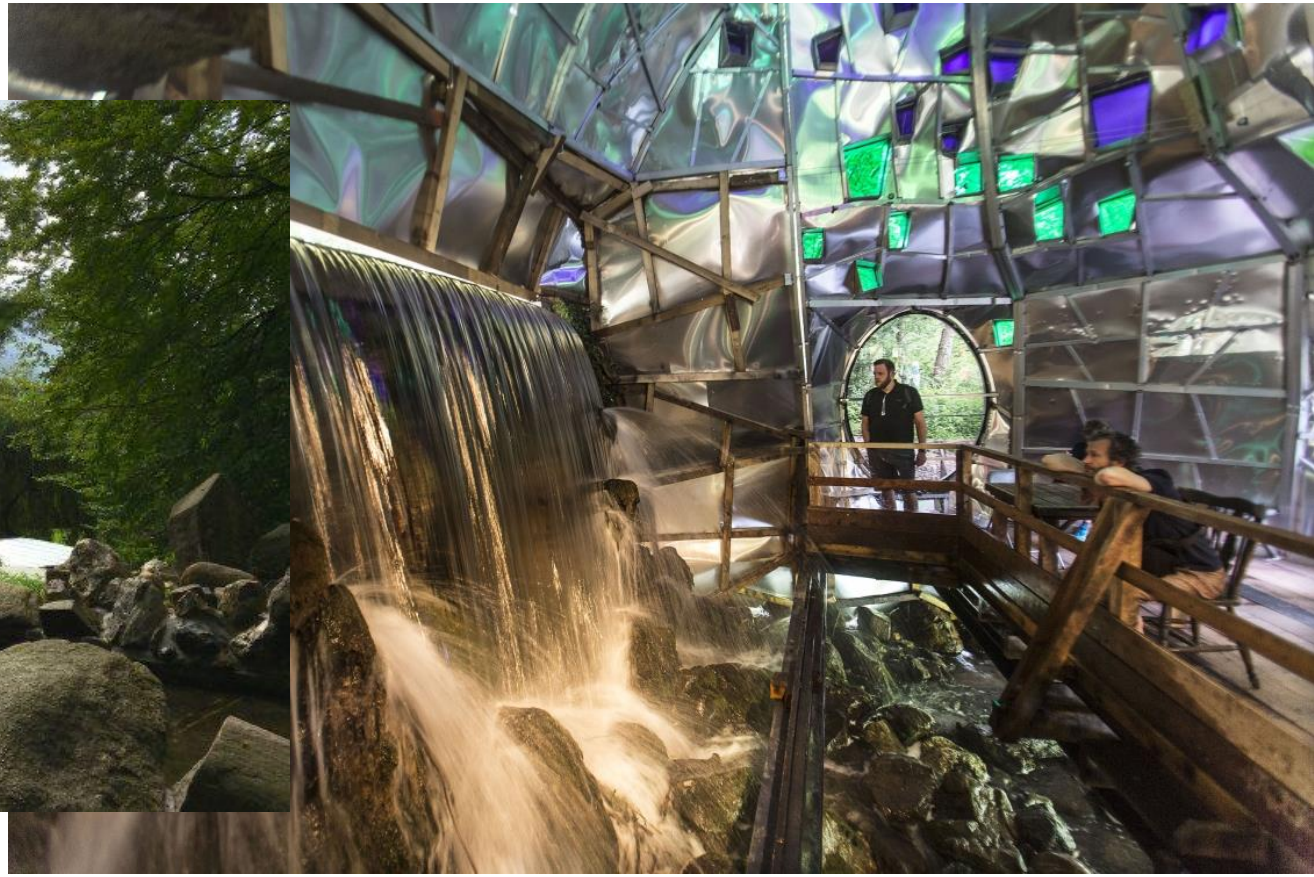
"Revised legislative proposals on waste to stimulate Europe's transition towards a circular economy which will ***boost global competitiveness, foster sustainable economic growth and generate new jobs"***

– Circular Economy package 2015 - Jobs, Growth and Investment

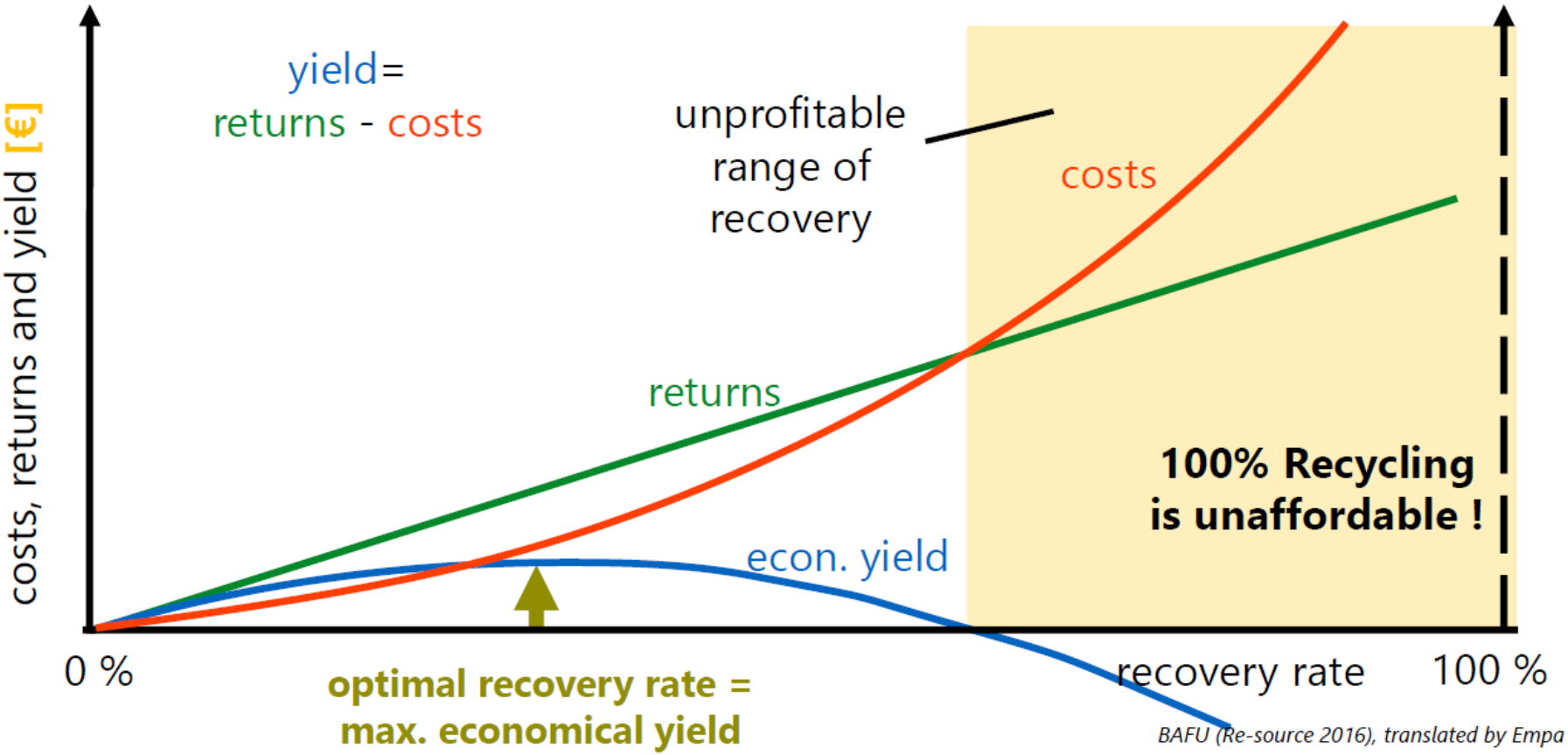
Timmermans Frans, Katainen Jyrki, Vella Karmenu , Bieńkowska Elżbieta

NYSE

NYSE
NYSE
NYSE
NYSE
NYSE

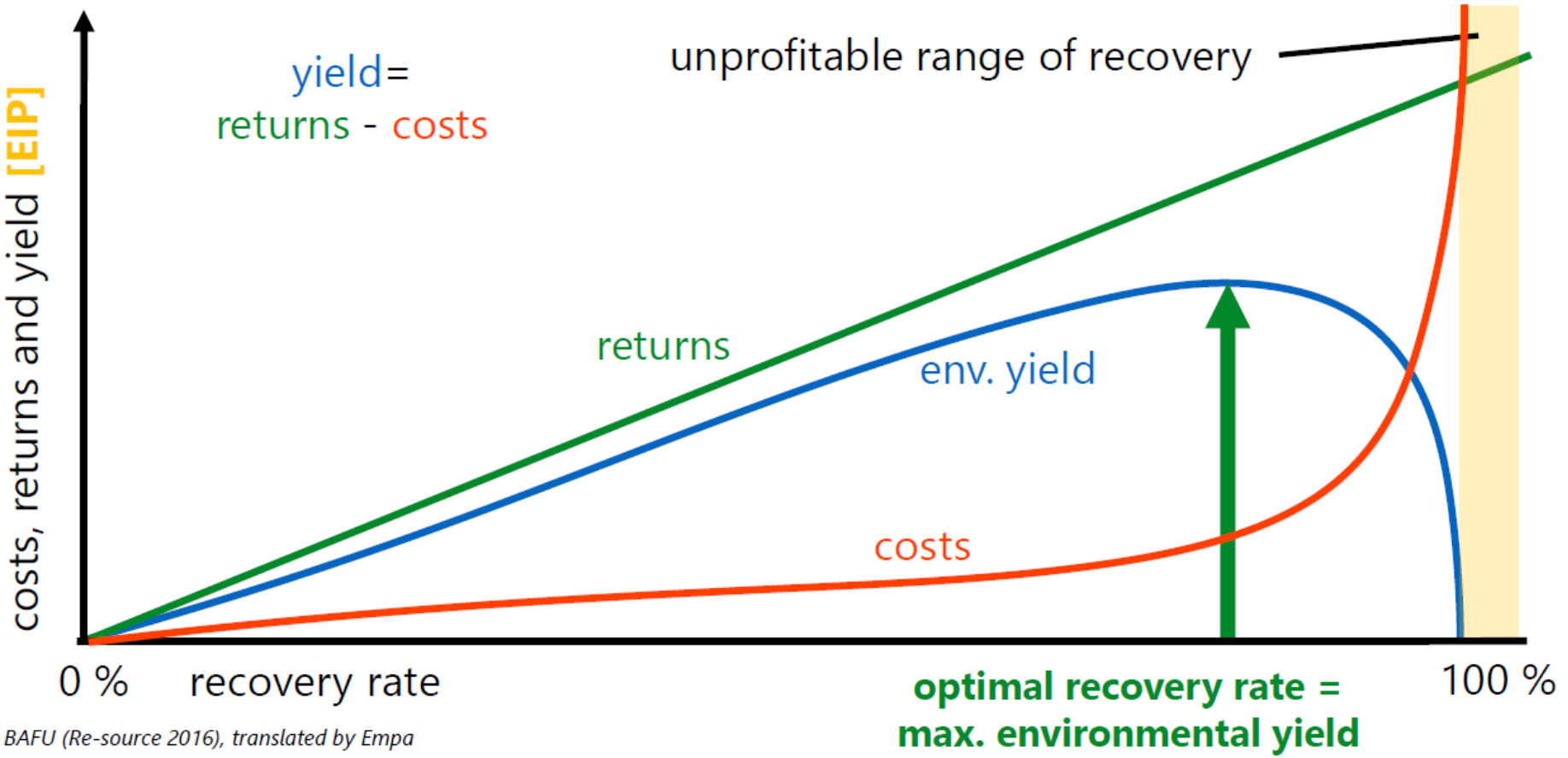


Recycling: economical perspective



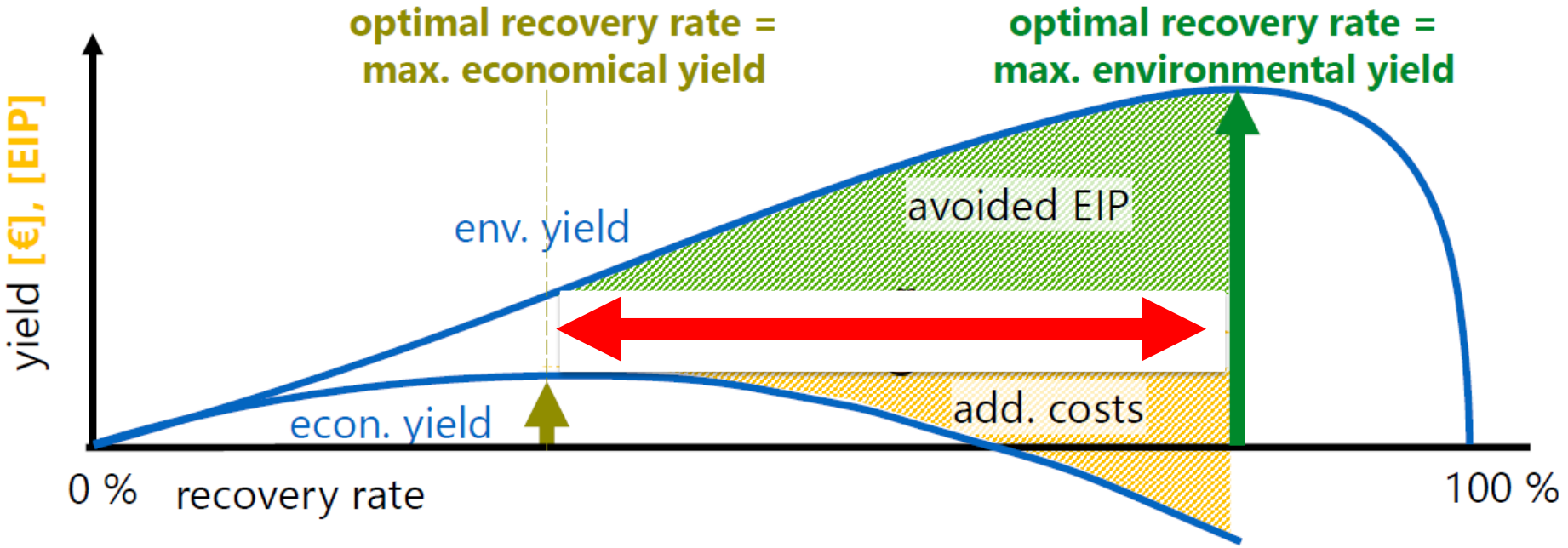
BAFU (Re-source 2016), translated by Empa

Recycling: ecological perspective



BAFU (Re-source 2016), translated by Empa

Improve recovery rates



Boomerang

Boomerang

- In order to prevent that the circular economy is coming back as a boomerang that will hit us:

- Higher volumes
- Good quality treatment
- Fair competition
- Reasonable margins

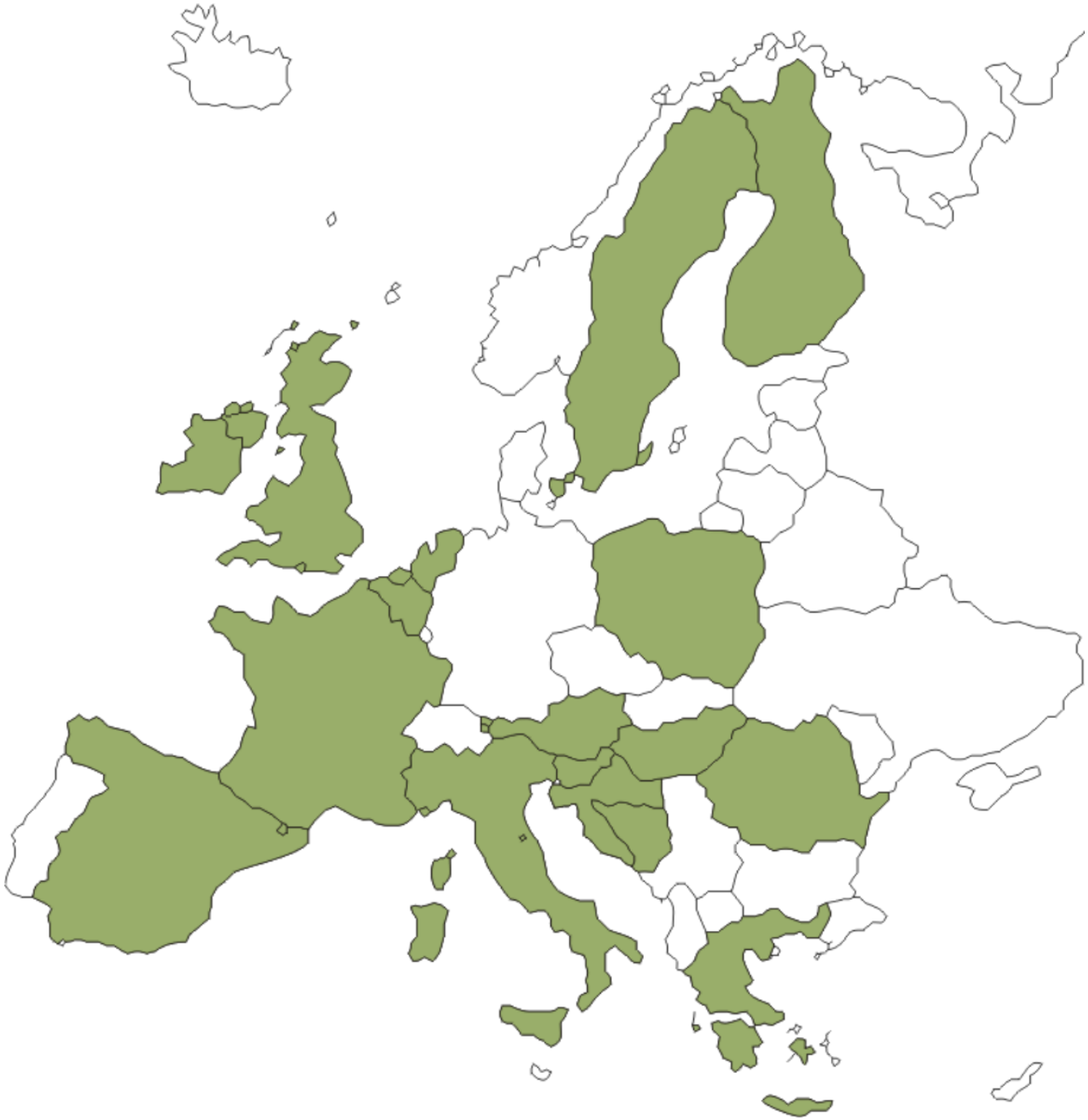
Mathieu Rama
RREUSE

27.01.2016

RREUSE: European association representing national/regional networks of social enterprises active in re-use, repair and recycling activities

RREUSE is a network of 29 members from 23 European countries + U.S.A

RREUSE represents more than 140,000 workers and volunteers



Facts about Waste Electrical and Electronic Equipment

- Fastest growing waste stream in the EU
- 3-5 % more WEEE per year
- 12 million tonnes by 2020

- Grey goods: personal computers, telephones, MP3 players, tablets, etc.
- Brown goods: audio equipment, televisions, etc.
- White goods: fridges, washing machines, stoves, etc.

Difficulties experienced with repair

Consumer goods are now less durable and repairable than in the past. RREUSE has investigated he increasing difficulties associated with attempting to repair modern electronic equipment which include:

- **Lack of access to and high costs of spare parts**: costs of repair are higher than purchasing a new appliance
- **Lack of appropriate repair information**: no free access to service manuals, software and hardware of product and components, for independent repair operators
- **Product design and components without re-use potential**: new designs make it increasingly difficult to repair a product or components without breaking them forcefully.

Case study of social enterprises active in WEEE re-use
made by the Joint Research Center: *"Analysis of durability, reusability and reparability - Application to washing machines and dishwashers"*

envie

L'électroménager rénové·garanti

Renovation of home appliances by people having difficulties finding employment and resale of this equipment at low prices

Created in 1984 in Strasbourg

Rewarded in 2015 by the City of Paris and by the French Institute of Circular Economy

envie

L'électroménager rénové·garanti

Envie became a network of 50 enterprises all over France (30 workshops and 45 specialised shops)

envie

L'électroménager rénové·garanti

- 2 500 employees including 2000 vocational integration
- 1/3 of Waste Electrical and Electronic Equipment
- 150 000 tonnes of waste treated

- 80 000 appliances renovated 4 000 tonnes of waste decrease
- 73 millions Euros of turnover
- For more than 30 years!

Sofie

Social cooperative working on collection, sorting, recycling and preparing for re-use of WEEE

Created jobs for 46 full-time workers, including people which where at risk of socio-economic exclusion

Sofie

Sofie benefits from the belgian Rec'UP label, being a sign of:

- Quality
- Equity
- Fair price

Recupel

Pour un environnement de qualité, recyclons!

- Partenership with Recupel (Belgian EPR scheme for WEEEE)
- SOFIE collects WEEE at retailers in the province of Liège

Sofie

- State-of-the-art equipment for WEEE refurbishment
- Trained technicians
- Strict procedures

- Partenership with Recydel (Wandre) for recycling activities
- Ensure the depolution, the dismantling and the shredding of fridges and small electric and electronic appliances

Activities related to the preparing for re-use of WEEE

Logistics: includes all the activities to deliver the product to the reuse centre after the end of its first use;

Refurbishing: includes all the treatments on the product to bring it into a satisfactory condition for selling;

Commercialisation: includes all the activities for the sale and post-sale servicing.

Logistic

- Supply the reusable products to the refurbishing facility
- Identify different sources (e.g. retailers, manufacturers, municipal collection schemes, consumers)
- Operate a first identification of re-usable products
- Operate a smooth handling of products to save their potential for re-use
- Save energy with an optimised transportation

Logistic

Importance of partnerships with the WEEE logistic stakeholders (manufacturers, retailers, municipalities):

- Identify the reusability of appliances at an earlier stage
- Improve the quality of the waste collection points
- Facilitate the access to broader sources of appliances
- Rationalise the transportation of the appliances

Logistic

Particular importance of partnerships with Extended Producer Responsibility Organisations:

- Finance the costs of handling waste and transport the WEEE to refurbishment facilities
- Establish a partnership between repairers and producers

Recupel
Pour un environnement de qualité, recyclons!

eco-systèmes
le plus simple, c'est de recycler

Refurbishing

- Additional checking:
  - Recent, clean and aesthetically in good condition
  - Time and costs for the necessary interventions
  - Availability of spare parts (by identifying the brand)
- Then plugged in and tested:
  - locking/unlocking of the door;
  - filling and filling stop;
  - engine rotation;
  - heating of the washing bath and temperature control;
  - emptying of the tank;
  - spinning

Refurbishing

- Identification of re-usable spare parts:
  - components that are more frequently substituted;
  - components that are known to be expensive;
  - components that are crucial for the external appearance of the products.

Refurbishing

What is needed:

- Facilitate the diagnosis of problems
- Accessibility and ease of disassembly of key components
- Availability of spare parts
- Update/upgradability of components
- Provision of information

Commercialisation

The target clients are:

- consumers — people in economic difficulties or people sensitive to the social and environmental finalities of the company;

- companies, mainly for ‘business-to-business’ products such as servers and copy machines;
- other reuse centres, purchasing spare parts.

Commercialisation

What is needed:

-Labels and warranties to ensure a good quality to the clients

-Availability of repair and maintenance booklets (provided by the manufacturer or developed by the reuse centre)

-More communication

Needed regulation

- Regulation EC 595/2009 on type approval of motor vehicles and engines (as a model)
- Ecodesign Directive 2009/125
  - The product should be able to be disassembled non-destructively into individual components and parts without the need for special proprietary tools to do this.
  - The availability of replacement parts must be guaranteed for a period of at least 10 years following the last component batch.
  - Free access to repair service documentation for all independent reuse and repair centres of the after-sales service providers together with any relevant fault diagnostic software and related hardware.

Needed regulation

- Directive on Waste Electrical and Electronic Equipment (WEEE) 2012/19
  - Access to repair and service manuals of the manufacturer's after sales service providers. This could be done in the form of free access to online repositories of service manuals.
  - Access to any test or fault diagnosis software of the after sales service providers
  - Access to any relevant hardware such as laptop connectors for example
  - Any related training for use of these tools/software

Needed regulation

- EU Consumer Rights Directive (2011/83/EC)
  - Extending the burden of proof on the manufacturer to at least two years EU wide.
  - Introduce requirements for showing the ‘average expected product lifetime (AEPL)’.
  - Explore the effects and impacts of extending minimum functional guarantee period, for example, on independent repair operators.
  - Obligation to use only standardised, freely available components for as many parts as possible (e.g. screws, motors, pumps etc.,)
  - An obligation to provide spare parts etc. for 100% of the AEPL or obligation to open the market and accept non-OEM components for repair without rejecting producer liability in this case.

Needed regulation

- EU VAT Directive (2006/112/EC)
  - Zero VAT on repair, maintenance, upgrade services and sales of second hand/refurbished products
  - Allow retailers to recoup VAT through donation of unsold new products to approved/accredited reuse centres from the social economy
  - Zero rated VAT for preparation for reuse activities and services carried out by social enterprises

Further reading:

•Investigation into the Repairability of Domestic Washing Machines, Dishwashers and Fridges - available here together with accompanying video

•Joint Research Center: ”Analysis of durability, reusability and reparability - Application to washing machines and dishwashers” – available here

• Position Paper on Integrating Resource Efficiency into Ecodesign Implementing Measures - available here

• The Management of Waste Electrical and Electronic Equipment – A Guide for Local Authorities - available here

• Better access needed to millions of discarded re-usable goods says EU study – available here

• Longer-lasting white goods cut environmental impacts by 30% – available here

• Spain first EU country to mandate re-use of electrical goods - available here

• Social Clauses: Why so important and how to implement them available here

Thank You

Contact details:

mathieu.rama@rreuse.org

www.rreuse.org

Facebook

Twitter

Christian Dworak

Chairman TC 111X

Corporate Technologies
BSH Hausgeräte GmbH

#CircularEconomy
@ECOS_Standard

ECOS

European Standards for Waste Electrical and Electronic Equipment (WEEE)

Collection | Transport | Re-Use | Treatment

Christian Dworak
CENELEC TC111x Chair

Why European standards for WEEE

European standards are requested by the EC and broadly supported by stakeholders.

EC requested European Standard Organisations (ESOs) to develop European standards (Article 8.5 of WEEE Directive 2012/19/EU).

Based on WEEELABEX standards; result of LIFE project, run by WEEE Forum in liaison with stakeholders.

Broadly supported by stakeholders:

- Experts from National Committees.
- Producers federations.
- Take-back systems.
- NGO's and independent experts and scientists.
- Recycling industry.

CEN CENELEC

An overview of European Standards for WEEE

European standards cover the whole chain of Collection | Transport | Re-use | Treatment

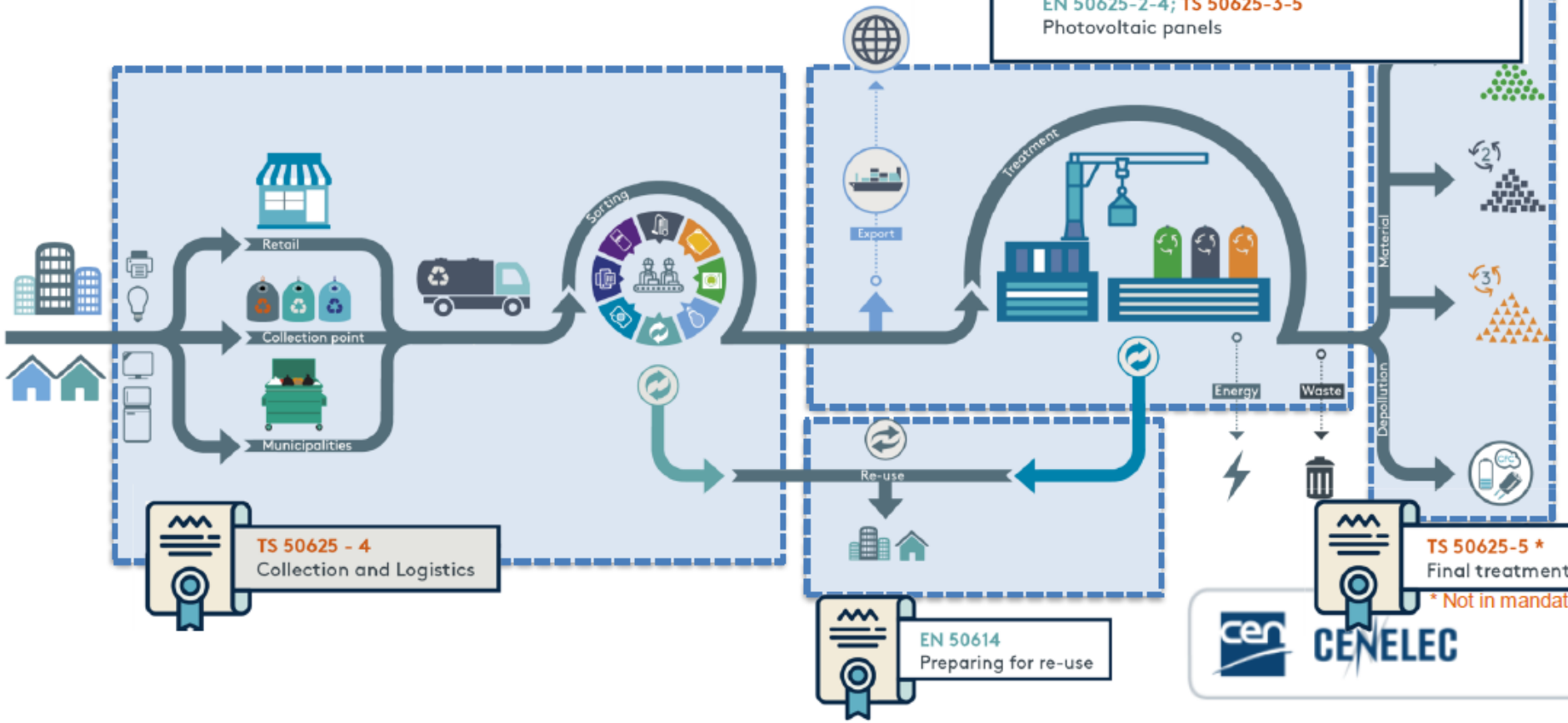
EN 50625-1; TS 50625-3-1
General treatment and depollution requirements

EN 50625-2-1; TS 50625-3-2
Lamps

EN 50625-2-2; TS 50625-3-3
Displays (CRT FPD)

EN 50625-2-3; TS 50625-3-4
Temperature exchange equipment

EN 50625-2-4; TS 50625-3-5
Photovoltaic panels



Compliance with European Standards for WEEE

- The standards for WEEE support the implementation of the WEEE directive
  - The use of standards is voluntary, there is no automatic legal obligation to apply them - However, law may refer to standards
  - Certification of the conformity with WEEE standards by third-party is voluntary - However, it could increase credibility

Standards are voluntary.

Laws and regulations may refer to standards

Certification of conformity can increase credibility.

CEN CENELEC

Compliance with European Standards for WEEE

- A certificate represents a third-party attestation that the collection, transport or treatment of WEEE meets the standards and thus requirements of the WEEE legislation.

- A certificate is issued by an accredited organisation (both growing numbers):
  - >160 certified WEEE treatment operators in 12 EU member states
  - > 50 independent accredited WEEE auditors .

WEEELABEX standards will be replaced by CENELEC standards.

CENELEC or WEEELABEX standards are legally required in one form or another *(Belgium, France, the Netherlands, Ireland, Slovenia)* or implemented by agreements between producers and take-back systems *(Italy, Czech Republic)*.

CENELEC