WEEE management - European Cluster Alliance

July 24th, 2020

ECODOM
Consorzio Italiano
Recupero e Riciclaggio
Elettrodomestici

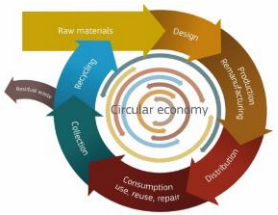
WHO IS ECODOM?

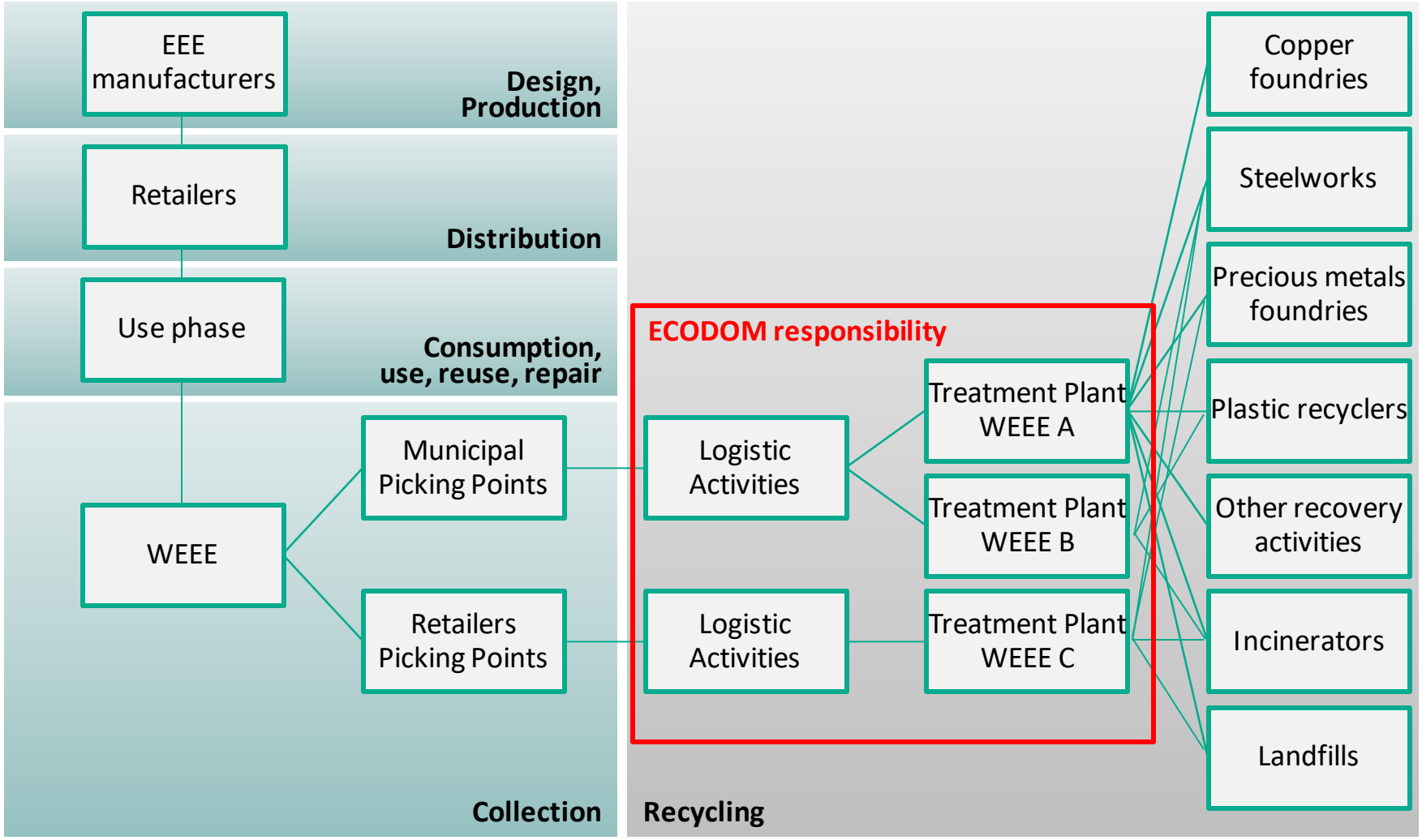
ECODOM - Consorzio Italiano Recupero e Riciclaggio Elettrodomestici is a not-for-profit private consortium established as a Compliance Scheme by the leading producers of large household appliances, extractor hoods and water-heaters operating on the Italian market to manage Waste of Electrical and Electronic Equipment (WEEE).

MEMBERS OF THE CONSORTIUM

ARISTON	B/S/H/	BARAZZA taste of design	BAXI	BEKO
CANDY	FABER	best Style & Lifestyle	BLANCO	Bompani MODENA
FRANKE	JP	boschetti	BSD	DAEWOO ELECTRONICS
Miele	nardi	elco heating solutions	falmec	FLUBERTAZZONI ITALIA
smeg	Tecnogas	FRIGO 2000	GLEMGAS	gorenje
Whirlpool CORPORATION	Gruppo Industriale Vesit S.p.A.	KitchenAid	la Cottura ITALIAN DESIGN	universal

HOW THE VALUE CHAIN WORKS





WHO IS ECODOM?

- With **143** member companies, Ecodom handled **36,1%** by weight of all WEEE collected in Italy
- Ecodom served **4,853** Picking Points throughout Italy
- Ecodom uses **41** suppliers, all strictly selected and constantly monitored, right across Italy
- Level of service reached a **99,73%** (transport Punctuality)
- Other waste: management of corporate waste and batteries

Data refers to 2019

WHAT WE DO?

153.004 t
waste managed

123.952 t
Household WEEE

29.038 t
Corporate waste

14 t
Portable batteries waste

111.886 t
recycled secondary raw materials

849.097 t
of CO2 avoided

588.024 GJ
of energy saving

43.925.744 €
of generated economic value

54.118
transports

Data refers to 2019

WHAT WE DO?

HOUSEHOLD WEEE

R1 – Cooling and freezing appliances

(Fridges, Freezers, Water heater, Refrigerators, air conditioning)

38.871

Tonnes of R1

R2 – Large household appliances

(Washing machines, Dishwashers, Drying machines, hoods, ovens)

77.162

Tonnes of R2

R3 – Screen and monitors

(TV and CRT, Displays (CCFL, LCD, plasma), PC tablets,screens)

3.307

Tonnes of R3

R4 – Small appliances

(Small household appliances, PV panels)

4.604

Tonnes of R4

R5 – Lighting equipment

(Light bulbs, discharge lamps, fluorescent lamps, other lighting)

8

Tonnes of R5

123.952

Tonnes of household WEEE managed

36,1%

Of the total household WEEE system

Data refers to 2019

WHAT WE DO?

RECYCLED MATERIALS

Iron 72.423 *Tonnes*

Plastics 13.718 *Tonnes*

Copper 2.535 *Tonnes*

Other materials 3.496 *Tonnes*

Concrete 13.735 *Tonnes*

Aluminium 2.319 *Tonnes*

Glass 3.660 *Tonnes*

111.886

Tonnes of secondary raw materials recycled

90,27%

Of the total household WEEE managed

Data refers to 2019

ATTENTION POINTS

- WEEE leakages
  - In 2019, the world generated 53.6 million metric tons (Mt), and only **17,4%** of this was officially documented as properly collected and recycled. In Europe it is one third of the total WEEE generated.
  - Small WEEE are stored in houses, drawers (mobile phones, laptops,…) and therefore not recycled
- CRM
  - CRM, from which attention from EU is high, are not recovered at industrial scale
- PLASTICS
  - Too many polymers in the output of mixed plastic from our recyclers, difficulties in performing a quality recycling of plastics (not downcycling)
- PREPARATION FOR REUSE
  - Large scale experiences of preparation for reuse of WEEE are missing, need of support from manufacturers and legislation

Source: http://ewastemonitor.info/

CIRCULAR ECONOMY INITIATIVES AND SECTOR TRENDS

- **Education:**
  - Raise awareness on Raw Materials with students (RM@school; EIT RM)
  - Internships (RAISE; EIT RM)
  - summer school (CIRCUCITY; EIT RM)
  - Young climathon (Young Innovators; EIT Climate-KIC)
- **New business models and standardisation:**
  - Pay per use (C-SERVEES - H2020; Circular Housing - EIT Climate-KIC)
  - Reuse of li-batteries (Lions2LIFE; EIT Climate-KIC)
  - Preparation for reuse / remanufacturing
  - Standards for CRM recovery (CEWASTE; H2020)
  - Support the transition to the new energetic labeling system in Europe
- **Innovative technologies:**
  - Plastics recycling (H2020: PolyCE; NONTOX)
  - CRM recycling (CRM Closed Loop Recovery; LIFE)
  - Digitalisation of the value chain (EIT Climate-KIC: INNOWEEE; BlockWEEE)

NONTOX PROJECT

PROBLEM

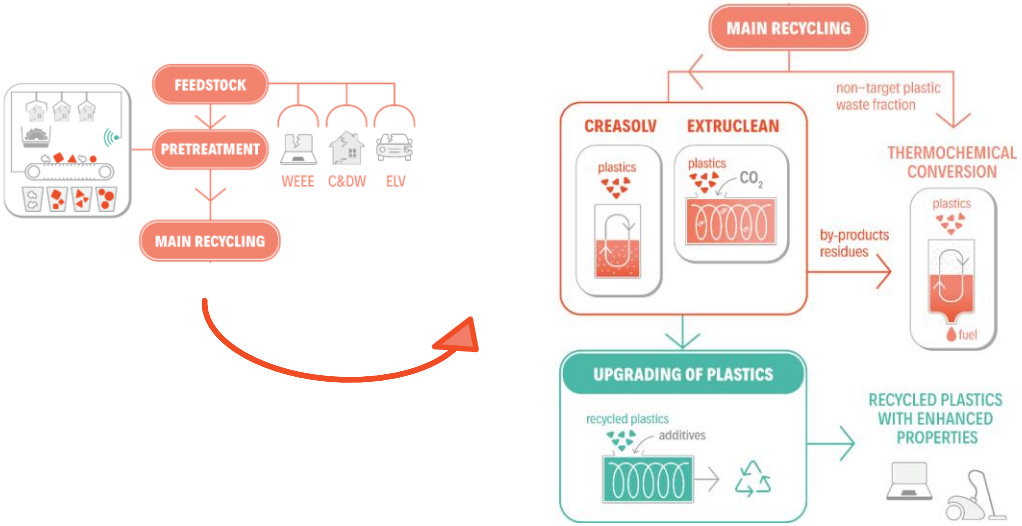
Hazardous substances, like legacy additives and flame retardants, make recycling not possible, increasing amount of plastic to be incinerated or landfilled.

SOLUTION

NONTOX aims to increase the recycling rates of hazardous plastics, taking into account the entire value chain.

TARGET PLASTICS

WEEE, C&DW, ELV



Budget: 5 million euros

Resources: 453 person months

Duration: 3 years (2019-2022)

Partners: 5 research institutes, 4 recyclers, 2 universities, 1 PRO

From: Spain, Italy, Finland, the Netherlands, Germany, Norway

Programme: CE-SC5-01-2018 Methods to remove hazardous substances and contaminants from secondary raw materials

This project has received funding from European Union's Horizon 2020 research and innovation programme under grant agreement N°820895

CRM RECYCLING RATES

End-of-life recycling input rates (EOL-RIR) in the EU-28

- > 50%
- > 25-50%
- > 10-25%
- 1-10%
- < 1%

H																	He 1%
Li 0%	Be 0%											B* 0.6%	C	N	O	F* 1%	Ne
Na	Mg 13%											Al 12%	Si 0%	P* 17%	S 5%	Cl	Ar
K* 0%	Ca	Sc 0%	Ti 19%	V 44%	Cr 21%	Mn 12%	Fe 31%	Co 35%	Ni 34%	Cu 17%	Zn 31%	Ga 0%	Ge 2%	As	Se 1%	Br	Kr
Rb	Sr	Y 31%	Zr	Nb 0%	Mo 30%	Tc	Ru 11%	Rh 9%	Pd 9%	Ag 55%	Cd	In 0%	Sn 32%	Sb 28%	Te 1%	I	Xe
Cs	Ba 1%	La-Lu[1]	Hf 1%	Ta 1%	W 42%	Re 50%	Os	Ir 14%	Pt 11%	Au 20%	Hg	Tl	Pb 75%	Bi 1%	Po	At	Rn
Fr	Ra	Ac-Lr[2]	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Uut	Fl	Uup	Lv	Uus	Uuo

[1]Group of Lanthanide	La 1%	Ce 1%	Pr 10%	Nd 1%	Pm	Sm 1%	Eu 38%	Gd 1%	Tb 22%	Dy 0%	Ho 1%	Er 0%	Tm 1%	Yb 1%	Lu 1%
[2]Group of Actinide	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

Aggre-gates 7%	Bento-nite 50%	Coaking Coal 0%	Diato-mite 0%	Feldspar 10%	Gypsum 1%	Kaolin Clay 0%	Lime-stone 58%	Magne-site 2%	Natural Cork 8%	Natural Graphite 3%	Natural Rubber 1%	Natural Teak Wood 0%	Perlite 42%	Sapele wood 15%	Silica Sand 0%	Talc 5%

* F = Fluorspar; P = Phosphate rock; K = Potash, Si = Silicon metal, B = Borates.

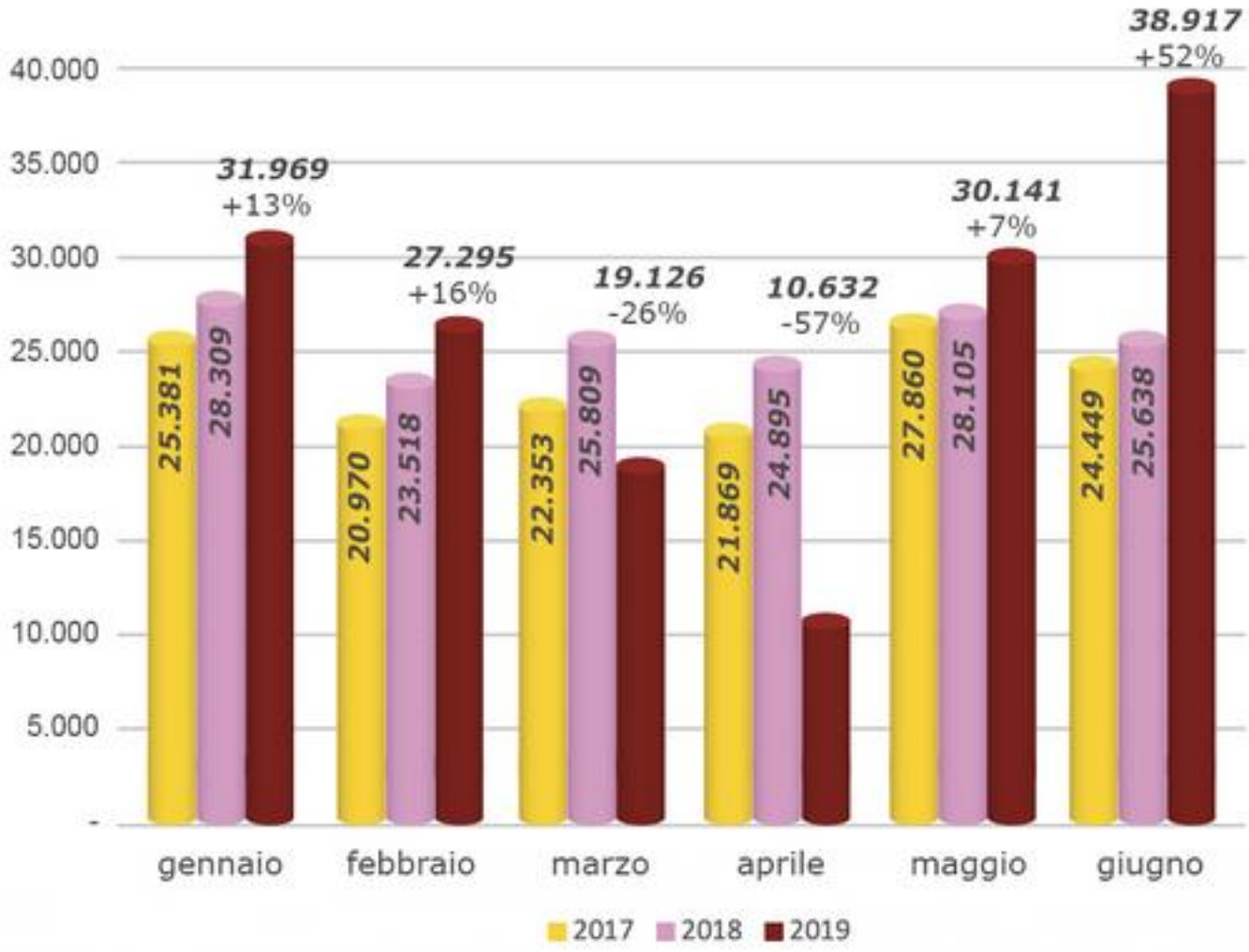
from European Commission, EIP on Raw Materials, Raw Materials Scoreboard 2018

COVID-19 IMPACT

- **Reduction of the ordinary monthly flow of WEEE** managed on a national scale by 80%
- **Longer intervention times** to favors suppliers: from 5 to 10 days
- **Selection of the necessary pick up requests**: evaluation of the actual emergency of the pick up requests and interruption of ordinary pick up requests at smaller Picking Points
- **Increase of the formal storage limits** to avoid WEEE and secondary raw materials stock saturation

Source: http://www.ecodom-consorzio.it/it/news/la-gestione-dei-raee-ai-tempi-del-coronavirus

COVID-19 IMPACT



Source: https://www.cdcraee.it/GetPage.pub_do?id=2ca980a1730df5a70173101d9da5041a&trackCode=news0320&trackKey=dati&URL=https://www.cdcraee.it/GetPage.pub_do?id=2ca980a1730df5a70173101d9da5041a

THANKS FOR THE ATTENTION

For more information:
http://www.ecodom-consorzio.it/en/

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