

Seval Group

March 2021, FEAD event

Energizing the EU green transition



Seval group of companies has activities in Environment and Logistics, Power Transmission Lines and Energy production, Real Estate and other

Environment & Transport



- S.E.Val. S.r.l.
- Seval Casei S.r.l.
- Ri.Plastic S.p.A.
- Setra S.r.l.
- Ritra S.r.l.
- Tellfer S.r.l.
- Sprint S.r.l.

Power Lines & Energy



- Seval Elettrica S.r.l.
- Energia Das S.r.l.
- Das Wind S.r.l.
- Das Villacidro S.r.l.
- Ray Energy S.r.l.

Real Estate and Other



- We Led S.r.l.
- Sim S.r.l.



Environment BU has 6 operating plants all over Italy and treat 130,000 Mt/y of WEEE, batteries and other industrial waste

Piantedo

- Refrigerators & freezers

Basiano

- Inkjet and toner cartridges reuse

Casei Gerola

Warehouse for a wide range of waste product as:

- Packagings
- WEEE and batteries
- Waste to be incinerated
- Waste to be disposed
- Tyres
- Metals

Sessano del Molise

- Refrigerators & freezers
- Warehouse for a wide range of products

Cimpello di Fiume Veneto

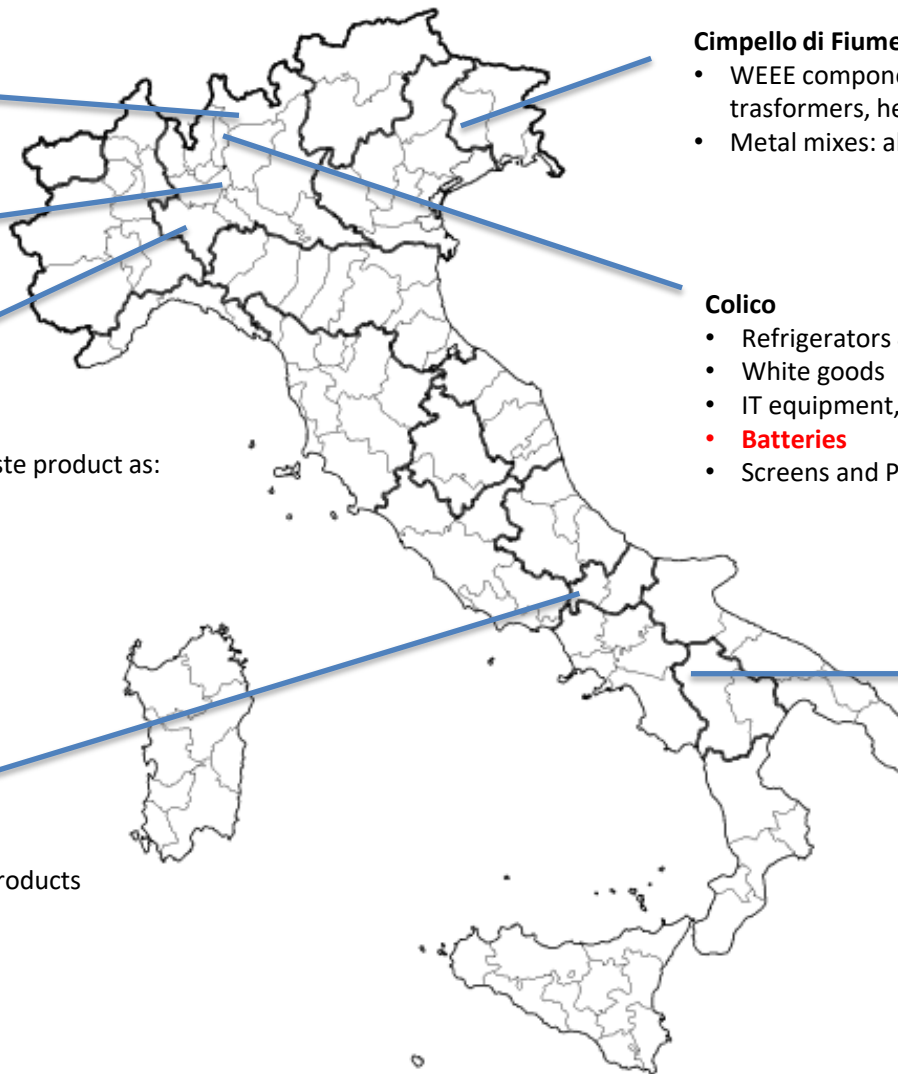
- WEEE components: compressors, cables, motors, transformers, heat exchanger
- Metal mixes: aluminum and copper for refining

Colico

- Refrigerators & freezers, chiller, vending machines
- White goods
- IT equipment, small appliances
- **Batteries**
- Screens and PHV panels

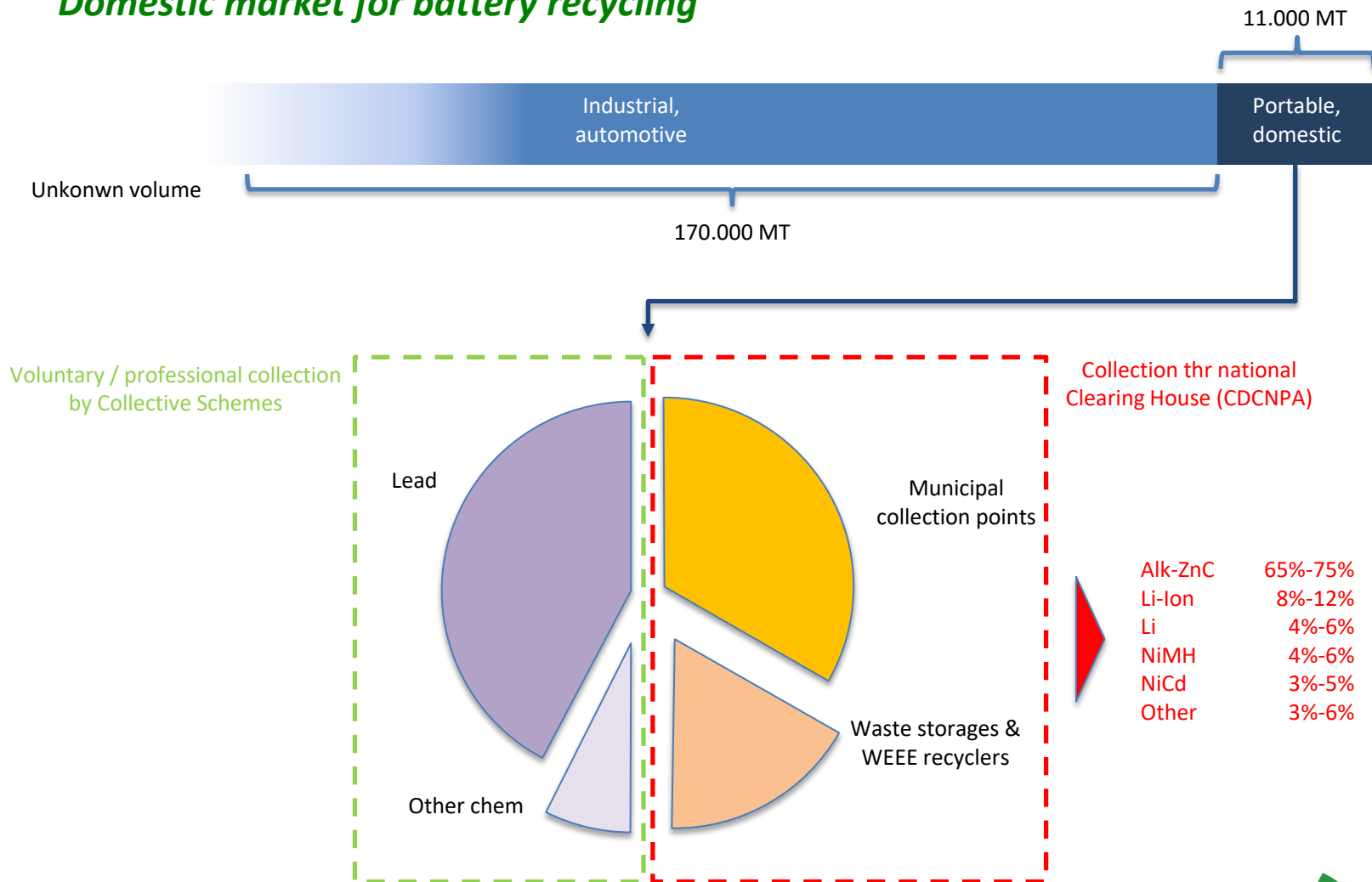
Balvano

- Refrigerators & freezers, chiller, vending machines
- White goods
- IT equipment, small appliances
- Screens and PHV panels



Domestic market for battery recycling

Domestic market for battery recycling



We give our customers the best processes for a wide range of products

Batteries



Process

- Manual pre-sorting and sorting of domestic batteries
- Mechanical shredding and separation of alkaline black mass, steel, plastic & brass
- Electro chemical process for Zinc and Manganese recycling (*not more in use*)
- Primary lithium batteries treatment plant (*pilot plant*)

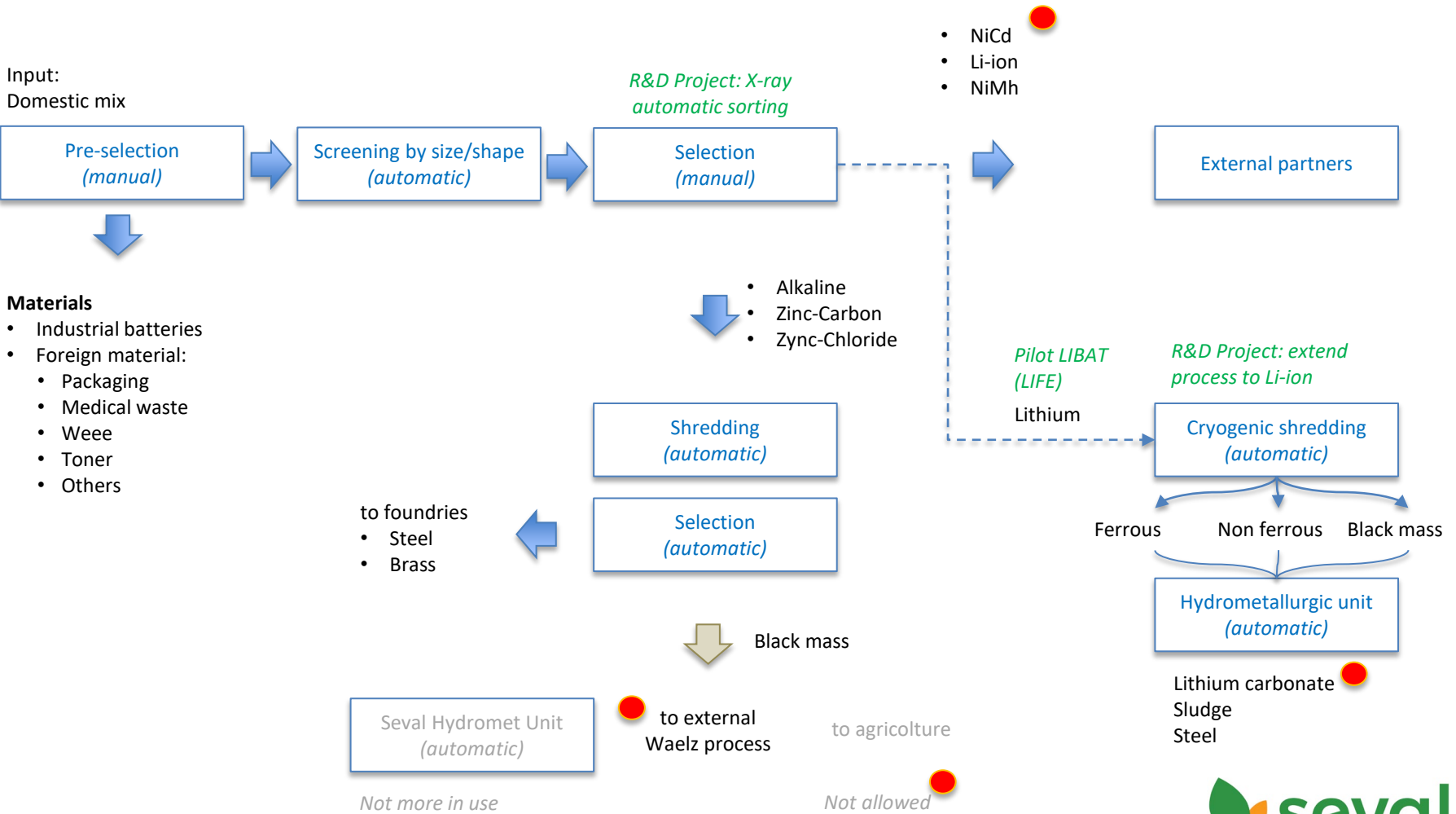
Main figures / facts (2020)

- 3,200 MT collected and sorted
- 2,100 MT shredded (Alkaline & Zinc-C)
- First lot of lithium batteries treated (<http://www.lifelibat.eu/en>)
- Launch R&D project about X-ray automatic sorting



Our process for Alkaline, Zinc-Carbon, Zync-Chloride batteries

Volumes still not allow big investment in all chems



Energising the EU green transition (in batteries)

Main challenges in our vision is to share EU recycling infrastructure

Seval – who is the Italian leader in battery collection – sort every year some hundreds ton each for NiCd, NiMh, Li, Li-ion HG

- Collected volumes are still low. Limited collection flows can't allow most of countries to established dedicated plants for all types of batteries
- As they can't rely on whole EU market, recyclers have to deal with a reduced payback and development for their investment
- Europe has to behave as a country not only in products, but also in waste

Possible answers:

- 👉 Refreshment of EER batteries' codes
- 👉 Issuing of industry guidelines to homogenize administrative approaches
- 👉 Reduce notification procedures scope of application within Europe
- 👉 Notification procedures: let's make them really lean
- 👉 Issuing End Of Waste criteria for black mass from batteries



Energising the EU green transition (in batteries)

Despite huge battery technology development, EER codes have been frozen >10 y

Current EER

- 160601* Lead batteries
- 160602* Ni-Cd batteries
- 160603* mercury-containing batteries
- 160604 alkaline batteries (except 16 06 03)
- 160605 other batteries and accumulators
- 160606 separately collected electrolyte from batteries and accumulators

- 200133* batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries
- 200134 batteries and accumulators other than those mentioned in 20 01 33

An idea for proposal

- 160601* Lead batteries
- 160602* Ni-Cd batteries
- 160603* mercury-containing batteries
- 160604 alkaline batteries (except 16 06 03)
- ~~160605 cancelled~~
- 160606 separately collected electrolyte from batteries and accumulators
- 160607 li-ion e li-polymers batteries and accumulators
- 160608 primary lithium batteries
- 160609 NiMh batteries and accumulators
- 160610* Unsorted batteries and accumulators including 160601*, 160602*, 160603*
- 160611 Other batteries and accumulators or unsorted batteries other than 160610*
- 160612* Black mass from batteries and accumulators treatment

- 200133* batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries
- 200134 batteries and accumulators other than those mentioned in 20 01 33

Energising the EU green transition (in batteries)

Legislators shall push not only high standards (that's good), also cut burdens (too many)

Notification (prior written consent procedure)

- Requested more & more (also when not mandatory)
- From 3m to 1y depending on authority/approach
- High cost from translation & guarantees (a notification can **cost 10,000€**, even for a single shipment!)
- High operational cost:
 - a notified transport can cost 25% more
 - it has to be notified 3 days advance
 - if late has to be cancelled
 - a change in the route shall be approved
 - mandatory also for trial loads

- EXCERPT -

from
the Decree of the Ministry of the Environment
on Service Charges within the Environment Institute

TABLE OF CHARGES

B. Services related to shipments of waste

1. For the handling of a notification on the shipment of waste and for the supervision of a shipment in accordance with the European Parliament and the Council regulation (EC) No 1013/2006 the following fees are charged in connection to the handling:

a) handling of a notification on the shipment of waste from or to	1 250 €
b) notification on the shipment of waste via	375 €
c) supervision of shipments according sections a and b	12 € / shipment

The fee for supervision of shipments is charged beforehand in connection with invoicing the fee for the handling of a notification on the shipment of waste.

d) handling of a notification on the shipment of waste according to the border district agreement	150 €
2. Amendment of a notification on the shipment of waste	150 €
3. Withdrawal of a decision on the shipment of waste	1 180 €
4. Pre-consent to a recovery facility	
a) handling of an application on the pre-consent to a recovery facility	3 450 €
b) amendment of a decision on the pre-consent to a recovery facility	635 €
c) withdrawal of a decision on the pre-consent to a recovery facility	1 180 €
5. Inspections which are needed in order to supervise that the Regulation (EC) No 1013/2006 of the European Parliament and of the Council on shipments of waste is complied with:	
- inspections related to other than natural persons or micro companies meant in the following point	80 € / hour
- inspections related to natural persons who do not practice economic activity or to a micro company which is meant in the Environmental Protection Act Section 206 subsections 2 and 3	60 € / hour

Energising the EU green transition (in batteries)

Black mass require industry guidelines & EoW EU regulation

- Some recycler selling alkaline black mass as a product (not waste, in force of local permits) to agriculture as a fertilizer
- Others are delivering same black mass as not dangerous waste to Waelz process
- Others are forced to classify it as dangerous waste with strange (190205) or generic EER codes (191211) to Waelz processes
- Often Waelz process – an environmental experienced solution - cannot take this material because of extreme limits on Ni presence

A industry guideline can help, setting:

- Which is correct EER classification of recycling products
- Requirements of black mass purity (=selection quality)

Even more important is a new End-Of-Waste EU regulation to free ship treated alkaline, lithium-cobalt black mass (also limited volumes!), setting quality requirements and uses allowed

Is really battery recycling strategic for EU?

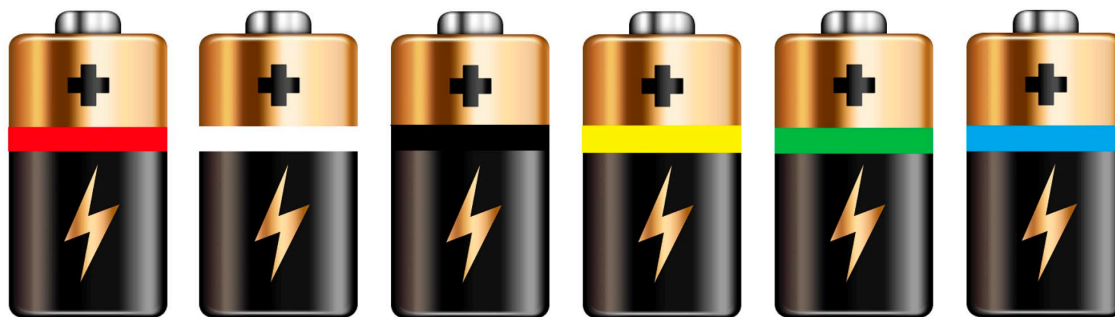
EU EoW regulation: only 3 regulation in 10 years!



Energising the EU green transition (in batteries)

High quality recycling is matter of high quality selection: a proposal

- High quality recycling is matter of high quality selection
- Sorting is still today for a big portion manual and automatic optical sorting lines has still some limits due to the huge amount of brands, releases, formats
- New EU batteries regulation proposal sets some labelling requirements. Our proposal is to use a color code (see picture) to mark different battery types (example IEC 62902:2019)
- Such a requirement on producers and importers can breakthrough the quality of all selection processes, opening more chances to automatic optical sorting machine



Thank you for your attention



COLICO (LC)

PIANTEDO (SO)

CASEI GEROLA (PV)

BALVANO (PZ)

SESSANO DEL MOLISE (IS)

CIMPELLO DI FIUME VENETO (PN)

BASIANO (MI)