

A2Aambiente and plastic recycling

LE2C - Modeling the transition towards sustainable plastic value chains in European regions-

OCTOBER 1 2024

COMPANY STRUCTURE

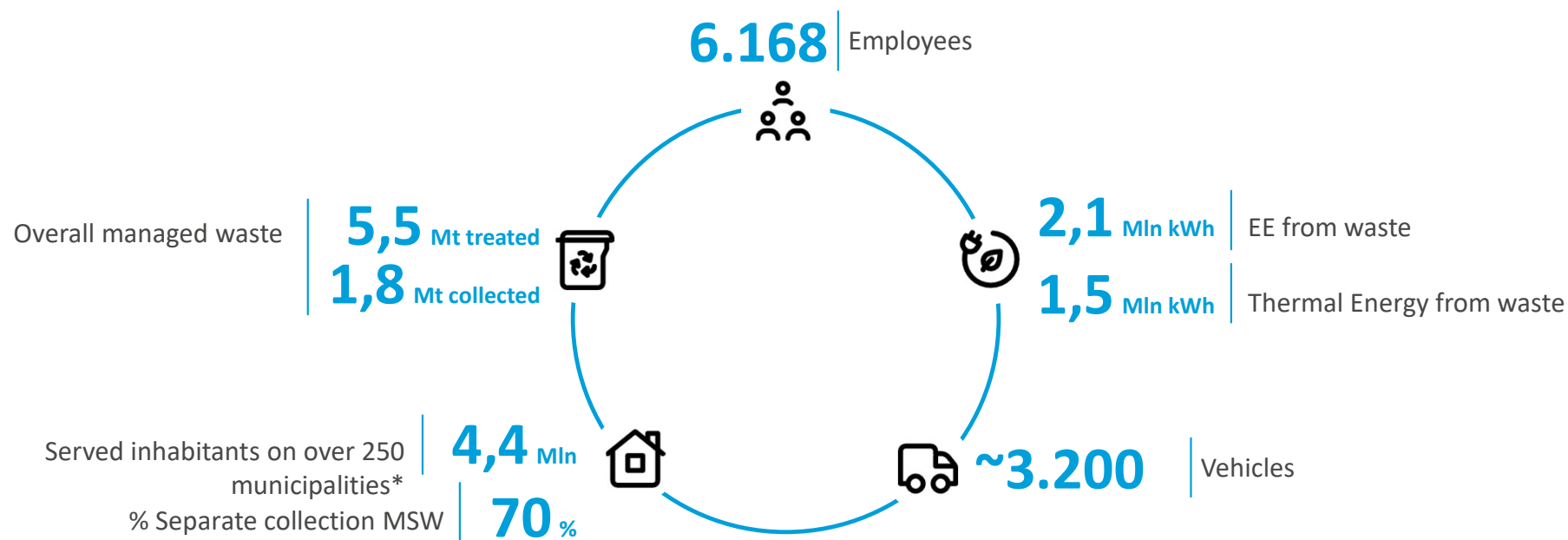


KEY FIGURES 2023

€ **1.458** Revenues

↑€ **375** EBITDA

€ **216** Capex










(*) through AMSA, APRICA, Linea Gestioni e Gelsia Ambiente

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WHERE WE ARE

Leader in Italy for material and energy recovery from waste

Material recovery plants	14	
OFMSW treatment plants	6	
WtE plants	1	
<i>For MSW</i>	9	
<i>For Hazardous Waste</i>	12	
MBT plants and SRF production	10	
Piattaforme polifunzionali	5	
Discariche	2	
Impianti biomasse e bioenergie	22	

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A2A AMBIENTE : FOCUS ON PLASTIC RECOVERY



2 selection plants

Secondary Selection Plants Corepla

100 kt treated waste

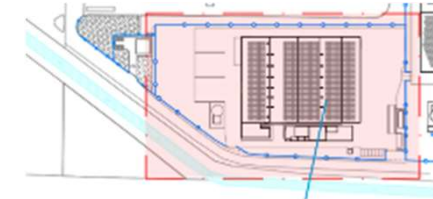
Muggiano (MI), Cavaglià (BI)

Municipal collection

Collection+ preliminary separation (Castenedolo, Fombio e Coccaglio) for production on monomaterial plastic from multimaterial collection

120 kt separate collection plastic

Lombardia, Liguria



LDPE recycling plant (authorized, ongoing final design)

Form LDPE waste to EoW granules, film, bags

10 kt capacity

Cavaglià (BI)

Commercial and industrial plastic collection and selection

A2A Recycling

5 kt plastic industrial / commercial Including EoW on PP in Buccinasco plant

Nord italy

PLASTIC SELECTION PLANTS

2 twin plants

INPUT

2 x 50.000 ton/year **PLASTIC** from separate collection both 'monomaterial' and 'multimaterial'



Plastic waste production of 1,8 million people



OUTPUT

11 «products» still «waste» no EoW:

1. PET bottles transparent
2. PET bottles light blue
3. PET bottles colored
4. Mixed PET opaque and labelled
5. HDPE 3D packaging
6. PP boxes
7. PP packaging
8. Mixed rigid packaging (PP e PE)
9. Polystyrene packaging
10. Film (mainly LDPE) neutral/colorless
11. Film (mainly LDPE) colored

Other selectable products:

- PET trays
- Mixed polyolefins

2 reject flows:

1. PLASMIX coarse
2. PLASMIX fine



1° PHASE:
BAG OPENER



2° PHASE:
MECHANICAL
TREATMENT

trommel,
Ballistic
aeraulic

3° PHASE:
OPTICAL
SELECTION



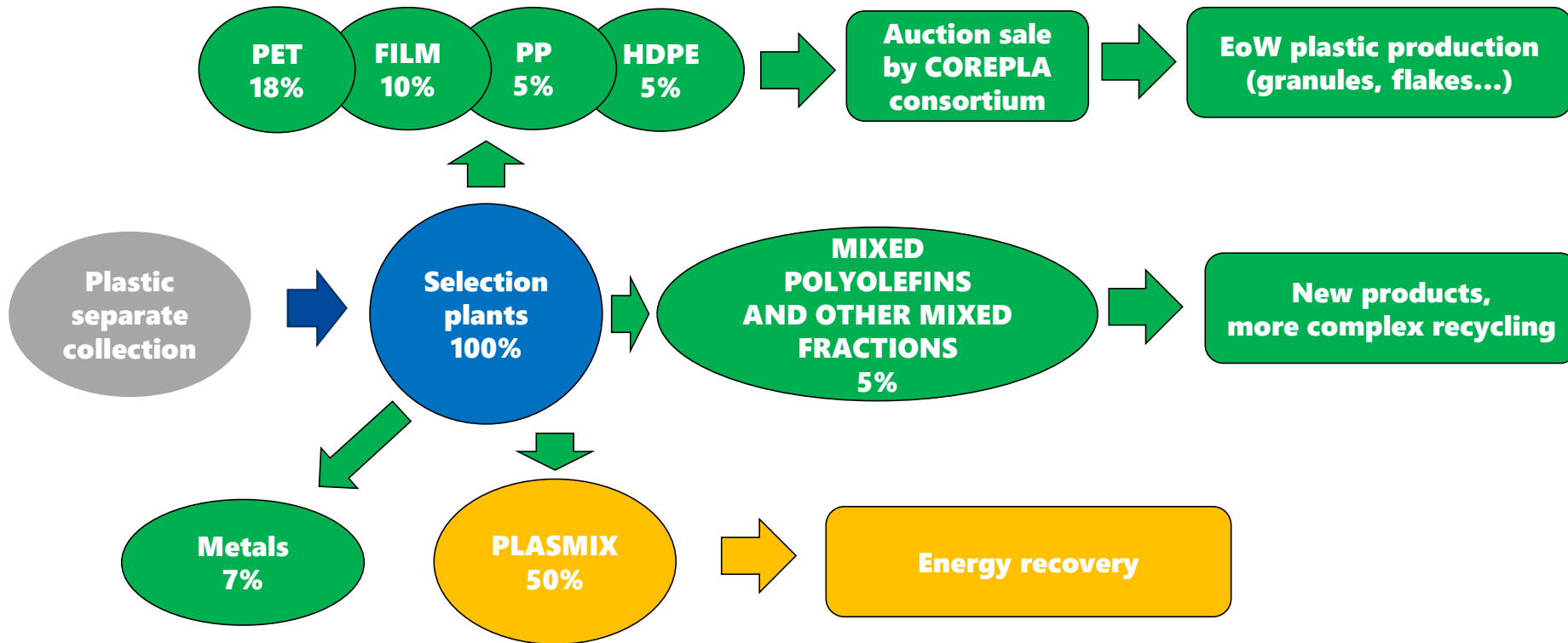
4° PHASE:
QUALITY
CONTROL



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MASS BALANCE OF PLASTIC SELECTION PLANTS



Plasmix is that fraction of the RD of plastic which, due to incorrect behavior by citizens or for technical or commercial reasons, **cannot be sent to the recycling**. On a national basis, it accounts for **45-50%** of plastic separate collection. It is therefore sent for energy recovery at TMV or cement factories.

LDPE RECYCLING PLANT: GRANULES AND FILM PRODUCTION

New plant for the recycling of LDPE (Low Density Polyethylene) plastic with a capacity of 10,000 t/year.

Downstream integration of A2A's plastic collection and sorting activities

Production of **bags and film reels for large-scale distribution, as well as LDPE granules**, a raw material also used in compounds with virgin plastic for the production of new products.

The plant is designed to allow maximum flexibility in production, adapting to market needs.

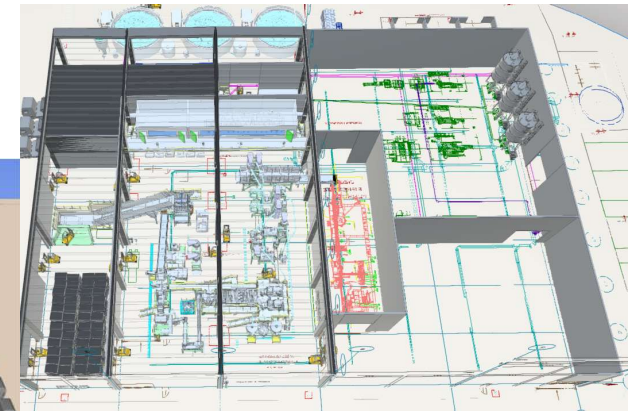
Main sections of the plant:

- Preselection
- Washing
- Water purification
- Drying/densification
- Extrusion
- Filming
- Cutting bags

Environmental authorization obtained

Detailed design on-going

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PLASTIC COLLECTION AND SELECTION IN LOMBARDIA

Plastic collection in Lombardia:

- **288.000 ton / year**
- **per capita: 29 kg per inhabitant / year**
- **Milano 34,3 kg per inhabitant / year**

5 plastic selection plants

- CSS Montello (BG) – 250.000 t/y
- CSS Masotina, Corsico (MI) - 120.000 t/y
- CSS A2A Ambiente Muggiano (MI) 50.000 t/y
- CSS CARIS VRD, Lainate (VA) 60.000 t/y
- CSS SERUSO Verderio (LC) 60.000 t/y

Overall selection capacity (over 500 kt/y) is much higher than separate collection → Lombardia imports plastic waste from other regions for selection

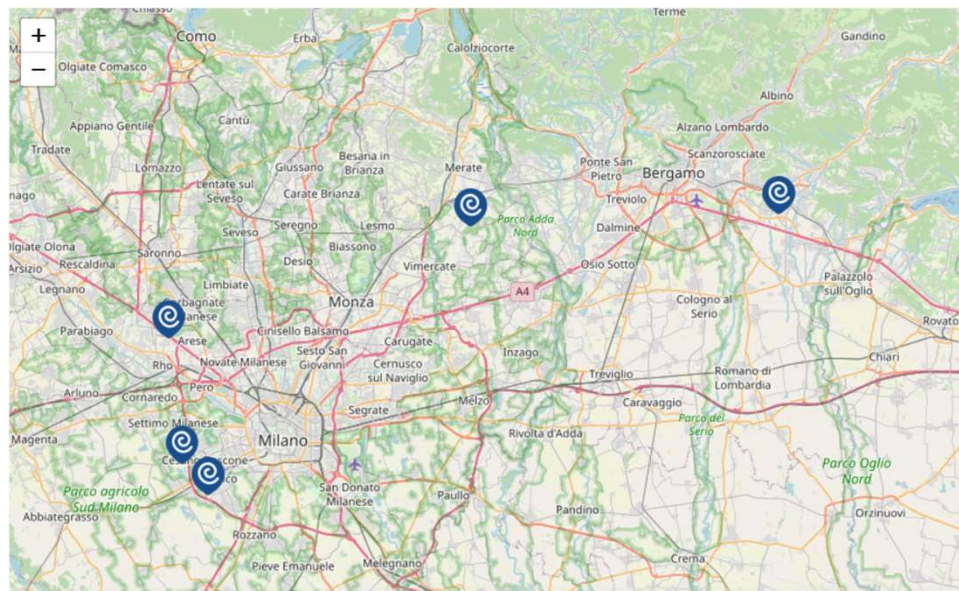
And, in general:

- **Plastic selection is a national market**
- **Production of recycled plastic (granules, flakes) is an European market**

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Comparison:

- Avg nord Italy 32,6
- Avg Italy 29 kg / per inhabitant / year
- Top performers regions: Valle d'Aosta 56, Emilia Romagna 44, Marche 42,6, Umbria 38, Sardegna 38, Piemonte 37
- Top performer big municipalities Bologna 38, Firenze 36,5

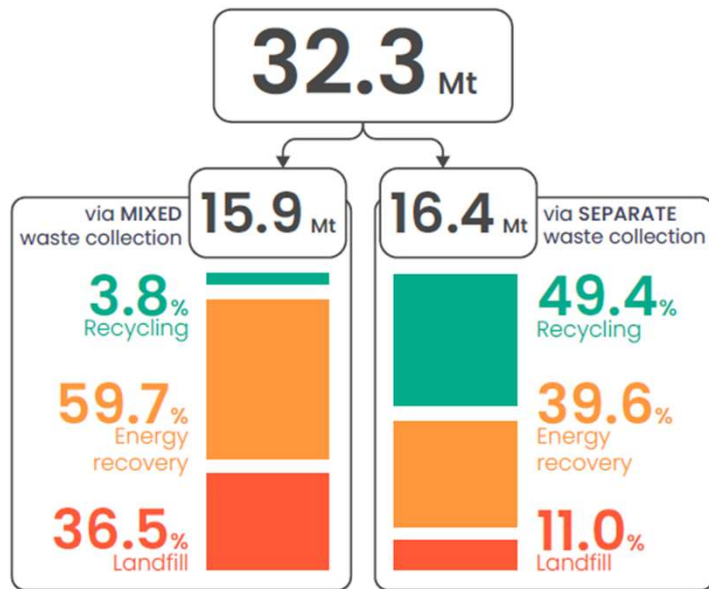


PLASTIC AS WASTE: EU MARKET

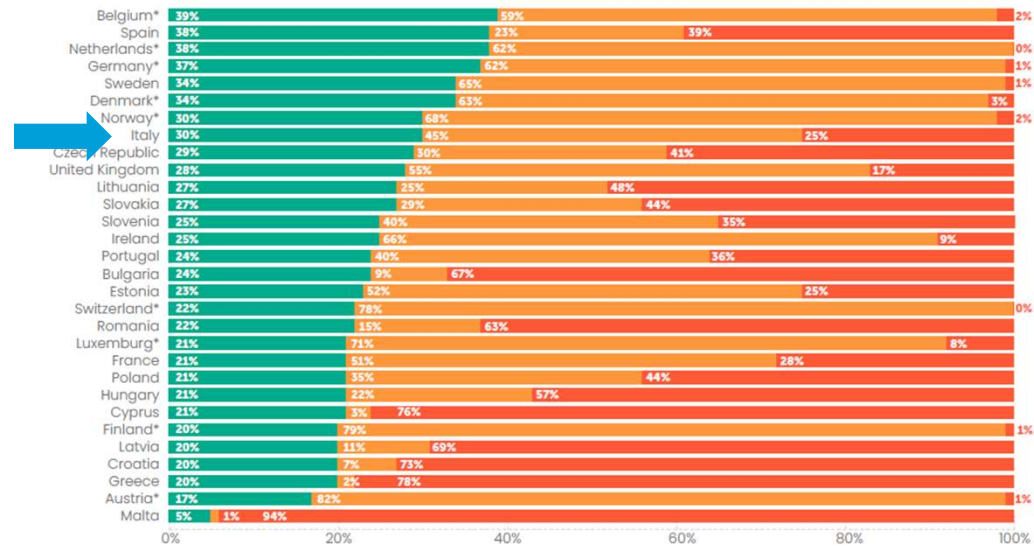
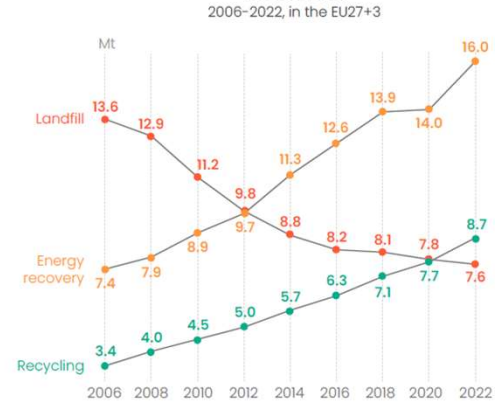
Plastic released for consumption 59 Mt @ 2022

45% non collected

Post consumer collection 32,3 Mt (55%)



Evolution of post-consumer plastics waste treatment 2006-2022, in the EU27+3



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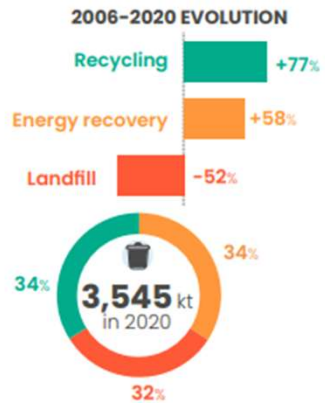
Fonte: plastics the facts 2024



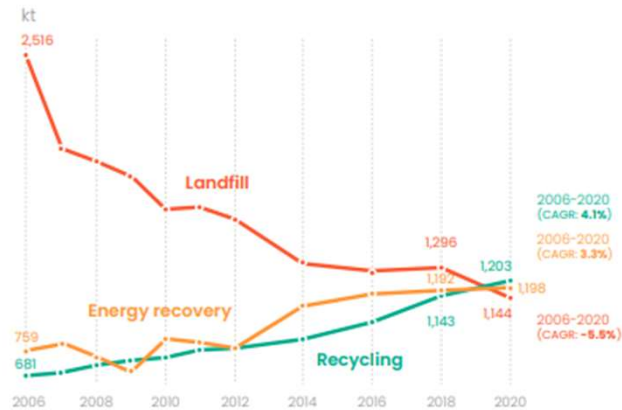
PLASTIC AS WASTE: IT MARKET

Italy · All plastics

From 2006 to 2020, the quantities sent to recycling increased by 77%, energy recovery increased by 58% and landfill decreased by 52%.

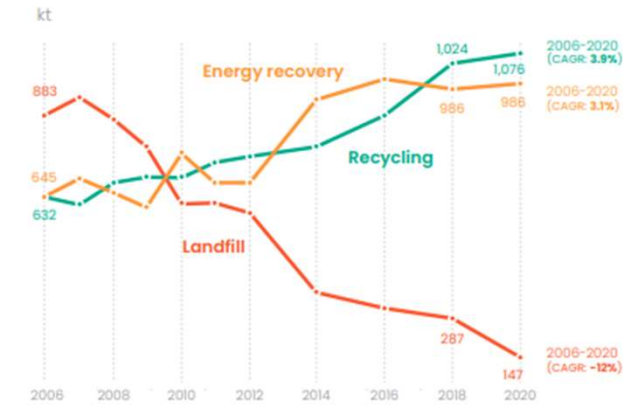


Post-consumer plastics waste treatment evolution 2006-2020 (in kt)



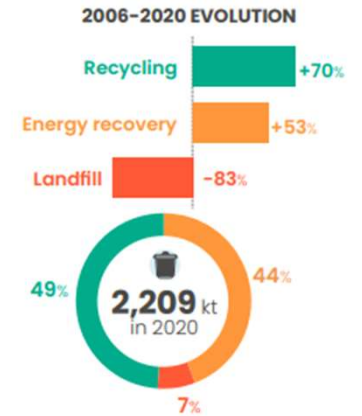
Italy · Plastics PACKAGING*

Post-consumer plastics PACKAGING* waste treatment evolution 2006-2020 (in kt)

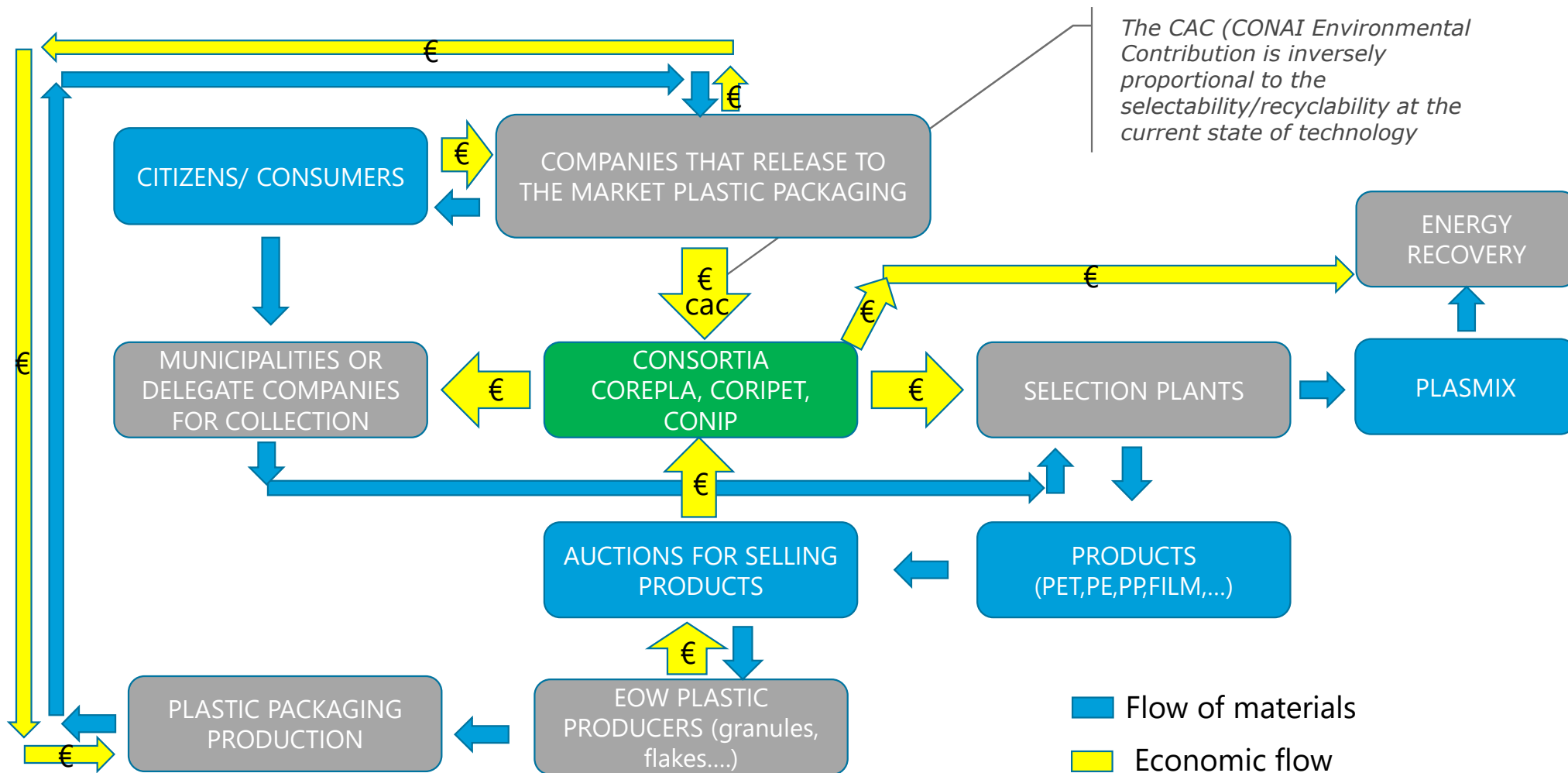


CAGR: Compound Annual Growth Rate
 Non-plastics waste (i.e., textiles, adhesives, sealants, coatings, etc.) is not included.
 *From household, industrial and commercial packaging
 Source: PlasticsEurope, A2A, Eurostat, ISTAT

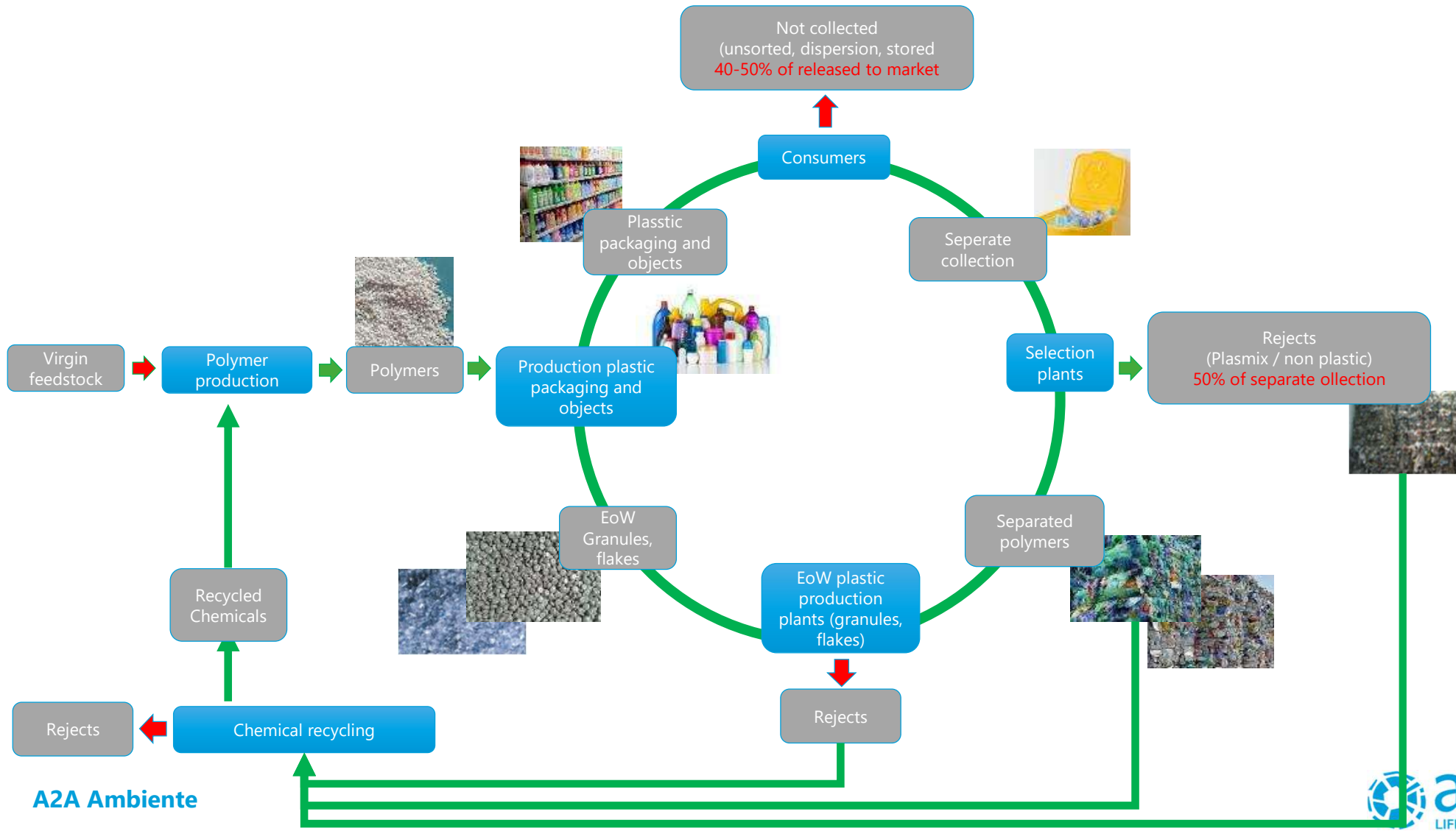
From 2006 to 2020, the quantities of post-consumer plastics packaging waste sent to recycling increased by 70%, energy recovery increased by 53% and landfill decreased by 83%.



ITALIAN SYSTEM OF CONSORTIA



CIRCULAR ECONOMY OF PLASTIC: THE FULL VALUE CHAIN



THANKS

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