



16·17·18

Settembre

2025

7th Edition

SIZING OF WASTE COLLECTION SERVICES AND RELATED COSTS IN EMILIA ROMAGNA

GIULIO RENATO

GROUP DIRECTOR OF WASTE
MANAGEMENT & FLEET **HERA GROUP**

ID Card

Hera Group

Management of environmental services

Service sizing

Collection models

Performance

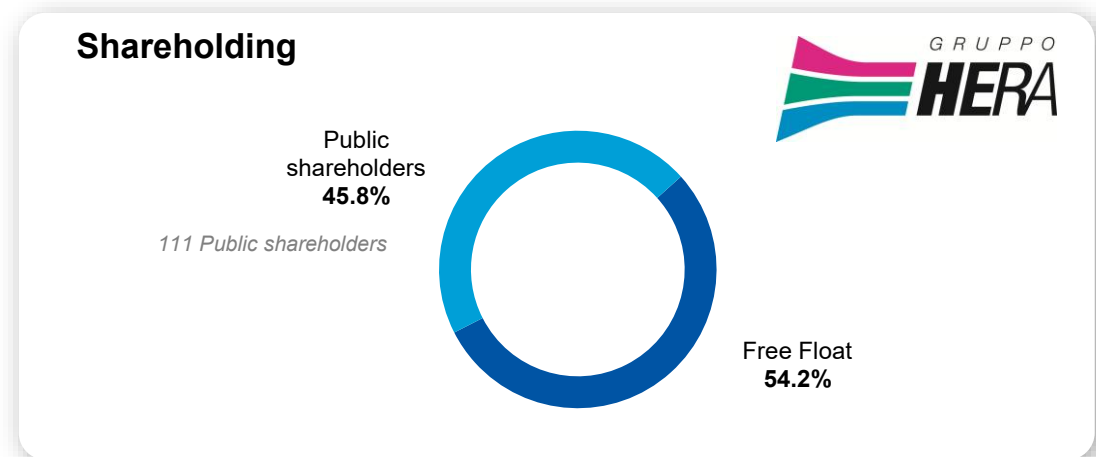
Economics

Hera Group ID Card



The **Hera Group** is one of Italy's largest multi-utilities, founded in 2002 from the merger of 11 municipal companies in the Emilia-Romagna region. Over the past twenty years, it has become the leading aggregator in the sector, with over 50 active M&A transactions in its four core businesses: waste management, water, gas, and electricity. Present throughout Italy, it operates primarily in the Northeast, in over 300 municipalities, with over 10,000 employees and a balanced portfolio of regulated and free-market activities. Today, more than **7.5 million** citizens (approximately 13% of the Italian population) use at least one of the Group's services.

Listed on the Milan Stock Exchange since 2003, Hera has been part of the FTSE MIB since 2019, among the 40 largest stocks on the Milan Stock Exchange, and in 2020 it entered the Europe and World indices of the Dow Jones Sustainability Index. It was among the first companies in Italy to declare its corporate purpose in its financial documents: **"Hera for the Planet, for People and for Prosperity"**, which expresses the desire to link industrial growth to the creation of shared value in a sustainable way.



Hera Group ID Card



Footprint



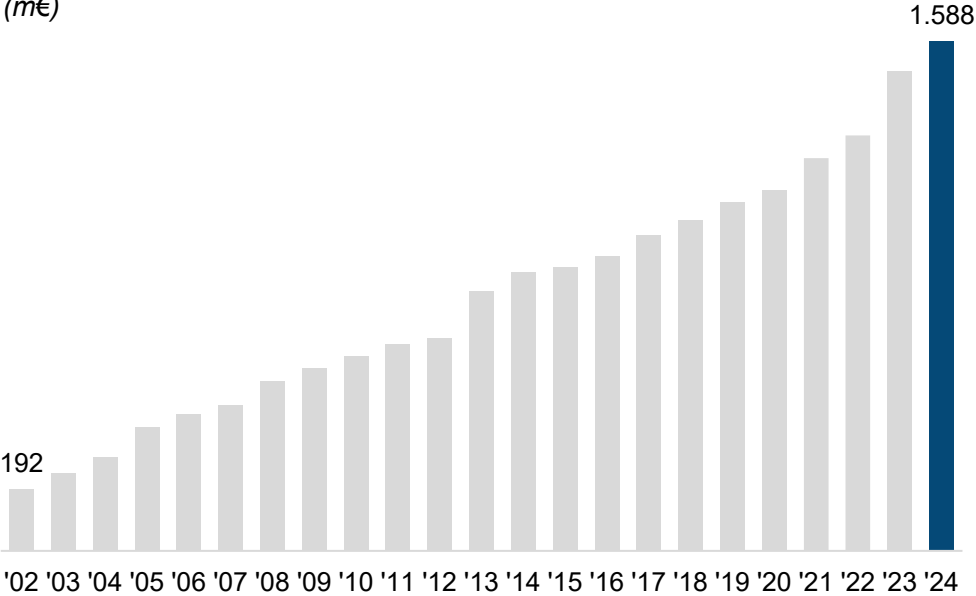
1° IN ENVIRONMENTAL SERVICES 	2° IN THE INTEGRATED WATER CYCLE 	3° IN THE SALE OF GAS 	4° IN THE SALE OF ELECTRICITY
7.7 mln/ton OF WASTE HANDLED	283.4 mln/mc OF WATER SOLD	10.7 mld/mc GAS SOLD	14.5 TWh OF ELECTRICITY SOLD
3.2 mln CITIZENS SERVED	3.6 mln CITIZENS SERVED	3.2 mln CITIZENS SERVED	1.7 mln CUSTOMERS
2.0 mln/ton OF URBAN WASTE COLLECTED	35,454 km OF WATER NETWORK	19,211 km OF GAS NETWORK	13,006 km OF ELECTRICITY NETWORK
9,965 WORKERS		311 MUNICIPALITIES	

Leading Italian multi-utility

Hera Group ID Card



Uninterrupted Ebitda growth since establishment
(m€)

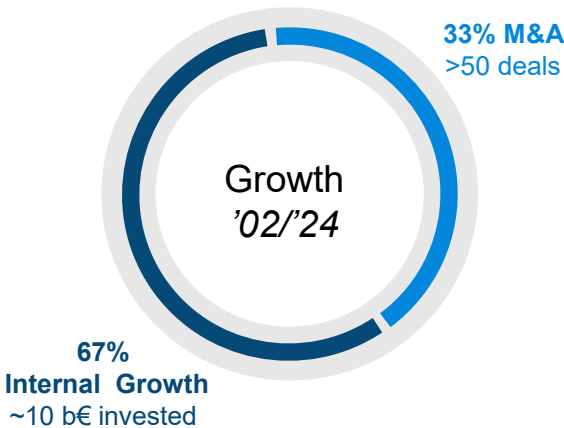


GROWTH **+10% Cagr**

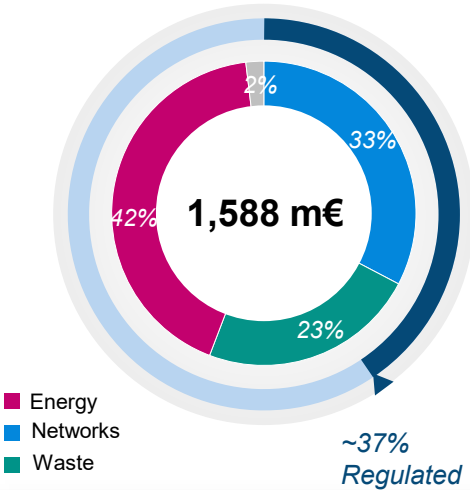
Annual turnover **15 mld€**

With a unique business model

All drivers at work for growth



Business mix
(2024 Ebitda, m€)



BALANCED MIX

Hera has grown more than eightfold

Hera Group ID Card



DOW JONES SUSTAINABILITY INDEX



S&P Global

BEST WATER AND
MULTI-UTILITY WORLDWIDE

MORNINGSTAR | SUSTAINALYTICS

Multi-utility with the
best ESG risk profile

MSCI

Outperforming in Carbon emissions and
Human Capital Development

REFINITIV

Best multi-utility worldwide both in ESG score
and in Diversity and Inclusion

MOODY'S
ESG Solutions

Advanced rating and
inclusion in the MIB ESG Index



FTSE4Good
Inclusion in the FTSE4Good
sustainable index

Top10 2024



ESG
IDENTITY
CORPORATE
INDEX 2024

1	HERA
2	ENI
3	POSTE ITALIANE
4	ERG
5	SNAM
6	A2A
7	SAIPEM
8	INTESA SANPAOLO
9	IREN
10	UNICREDIT

Hera is considered among the most sustainable companies worldwide

ID Card

Hera Group

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Economics

Territory of Emilia Romagna



BOLOGNA

50 cities
911 K Citizens



MODENA

32 cities
491 K Citizens



RAVENNA CESENA

35 cities
598 K Citizens



FERRARA

1 cities
130 K Citizens



RIMINI

18 cities
319 K Citizens



1,5Mt
URBAN WASTE COLLECTION



77 %
SORTING WASTE as % of
TOTAL WASTE



136
CITIES SERVED



2.989
EMPLOYEES: HERA e Partner



1,5 Mill
CUSTOMERS SERVED

2,45 Mill
CITIZEN SERVED

The most important pillars



Information
and communication



Services and
logistics



Waste treatment
and disposal



Customer care



Pay AsYou Throw
(PAYT)



Information and communication

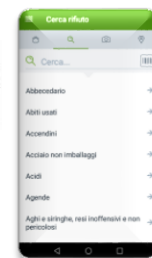
Environmental education



Engagement



Simplification and accessibility



Checks



La raccolta differenziata ha bisogno del tuo aiuto!
Giocattoli e altri oggetti rovinano la raccolta della plastica, solo i contenitori in plastica/lattine vanno bene

www.ilrifutologo.it

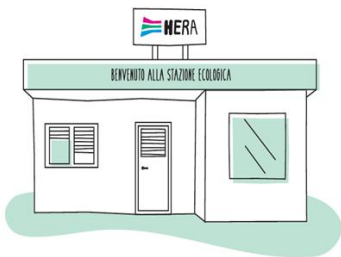


Services and logistics



WASTE COLLECTION CENTER

138



WASTE BINS

353.000

123k CONTAINERS

19% of which SMARTY



230k Bins



VEHICLES

Hera Partner

1.640



Automated Side-Loader Truck



Rear-Loader Truck



Automated Side-Loader Truck



Sweeper



Street washer



Hight pressure washer



Multilift Truck



Top Loader Crane



Van

Waste treatment



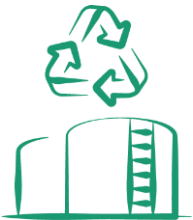
FIRST
in Italy



TOP TEN
In Europe



100 plants



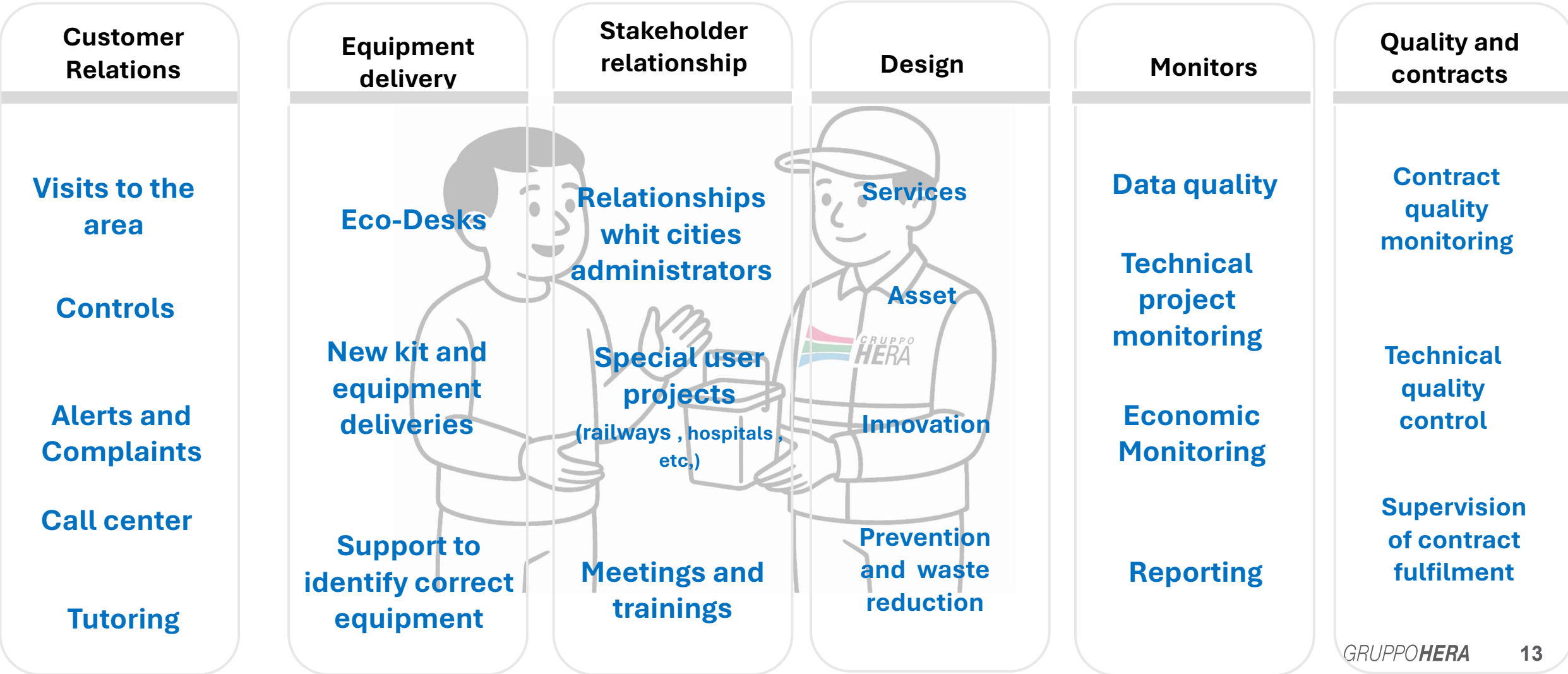
7.7 million tons of waste treated and marketed, **1,5** of which urban waste in Emilia Romagna



PRINCIPALI SITI IMPIANTISTICI

Hera, leader in environmental services
in Italy and Europe

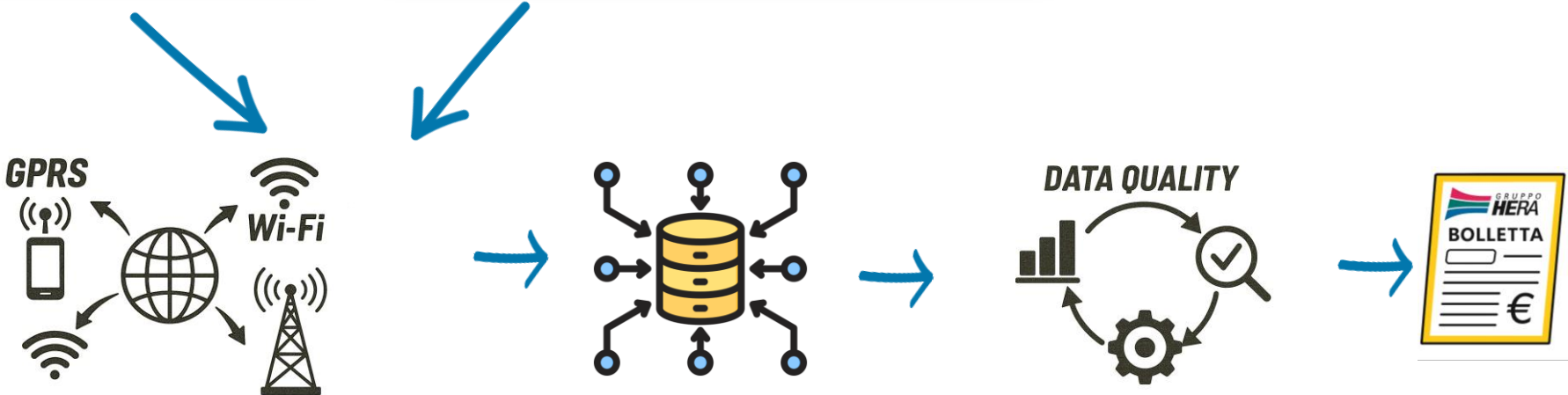
Customer care



Pay as you throw



Equipment associated with each citizen
Access control technology
Volumetric limitation
Interoperability
Traceability of waste delivery
Billing



ID Card

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Service sizing



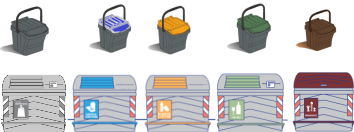
Standard

Waste

% Recycling

Model

Service Level

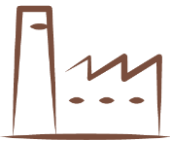


- Territorial distribution
- Container volume (lt)

Logistic

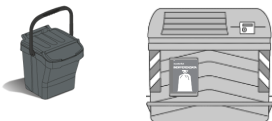
Plant

Territory



Project Output

Number and Type Containers



Collection frequencies

Calendario raccolte porta a porta (dal 30 giugno 2025)

	LUN	MAR	MER	GIO	VEN	SAB	DOM	MODALITÀ DI ESPOSIZIONE
Rifiuti a Lattini								Bidone
Carte e Cartone								Bidone
Organico								Bidone
Indifferenziabile								Bidone

Operational teams & veichles



HERGO

logistics



collection



alerts



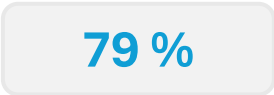
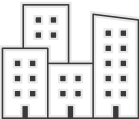
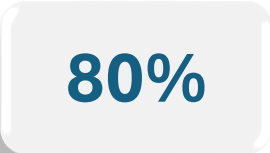
Targets and regulation



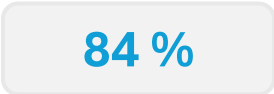
Regional planning



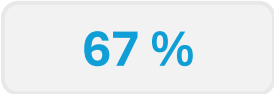
% Waste Sorting



Coast and capital



Lowland



Mountain

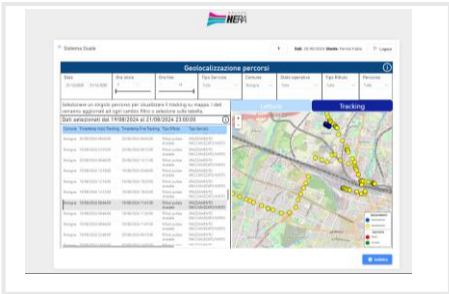
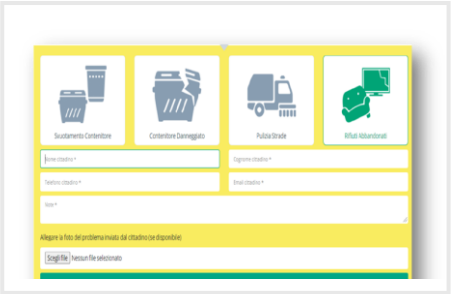
Service contract



Technical standards

Costumer managment

Monitoring



Commercial quality

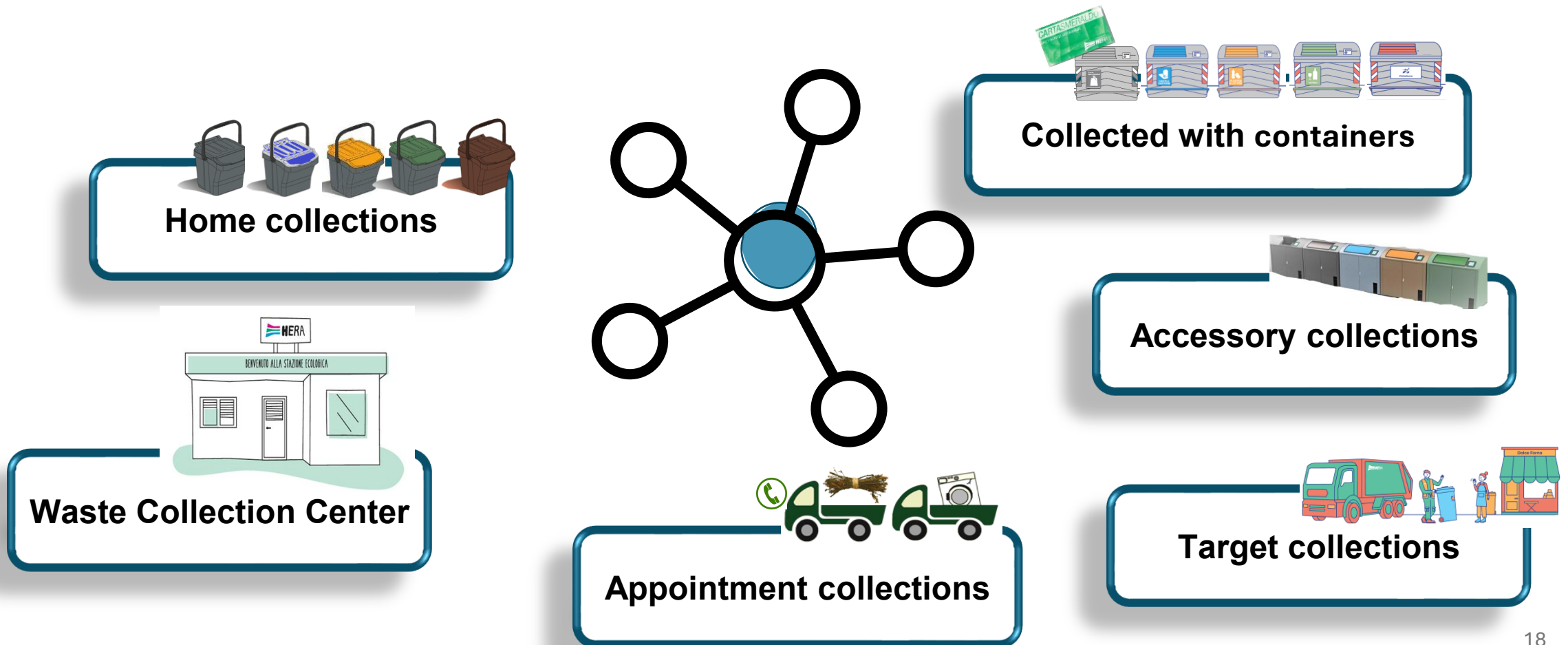
Technical quality

Regulation



Collection models

The collection models are applied and used together in an integrated and complementary way and according to the urban context, local characteristics and specific needs of the community and local businesses.



Effects of a reorganization of collection services



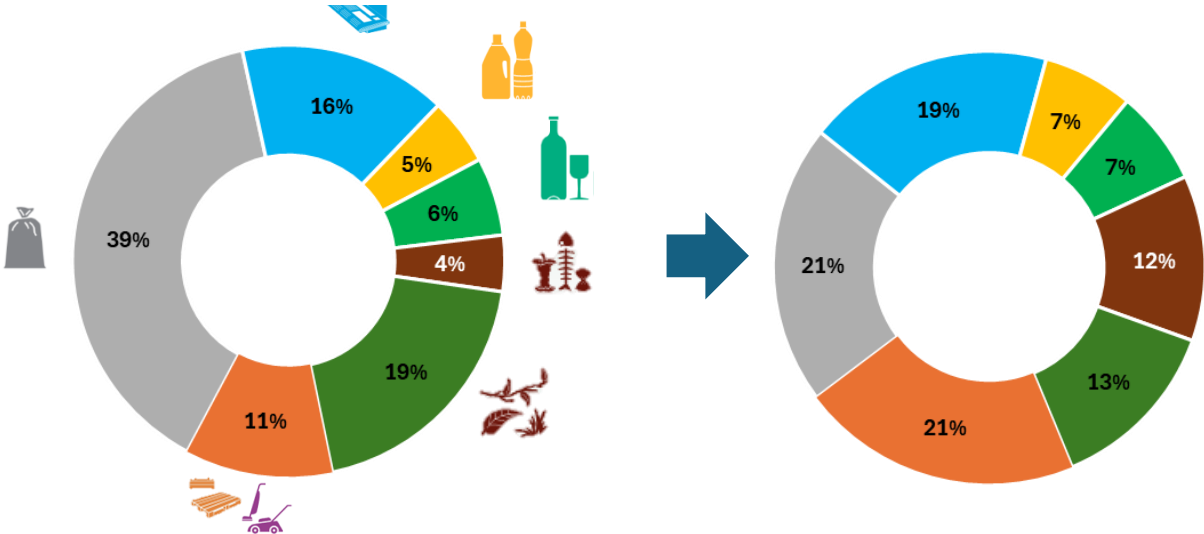
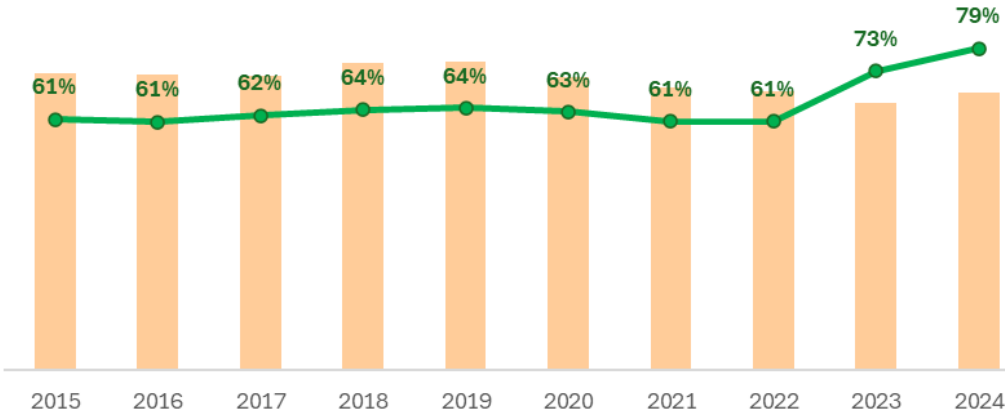
Effects

Reduction of total waste collected

Increase waste sorting as % total waste

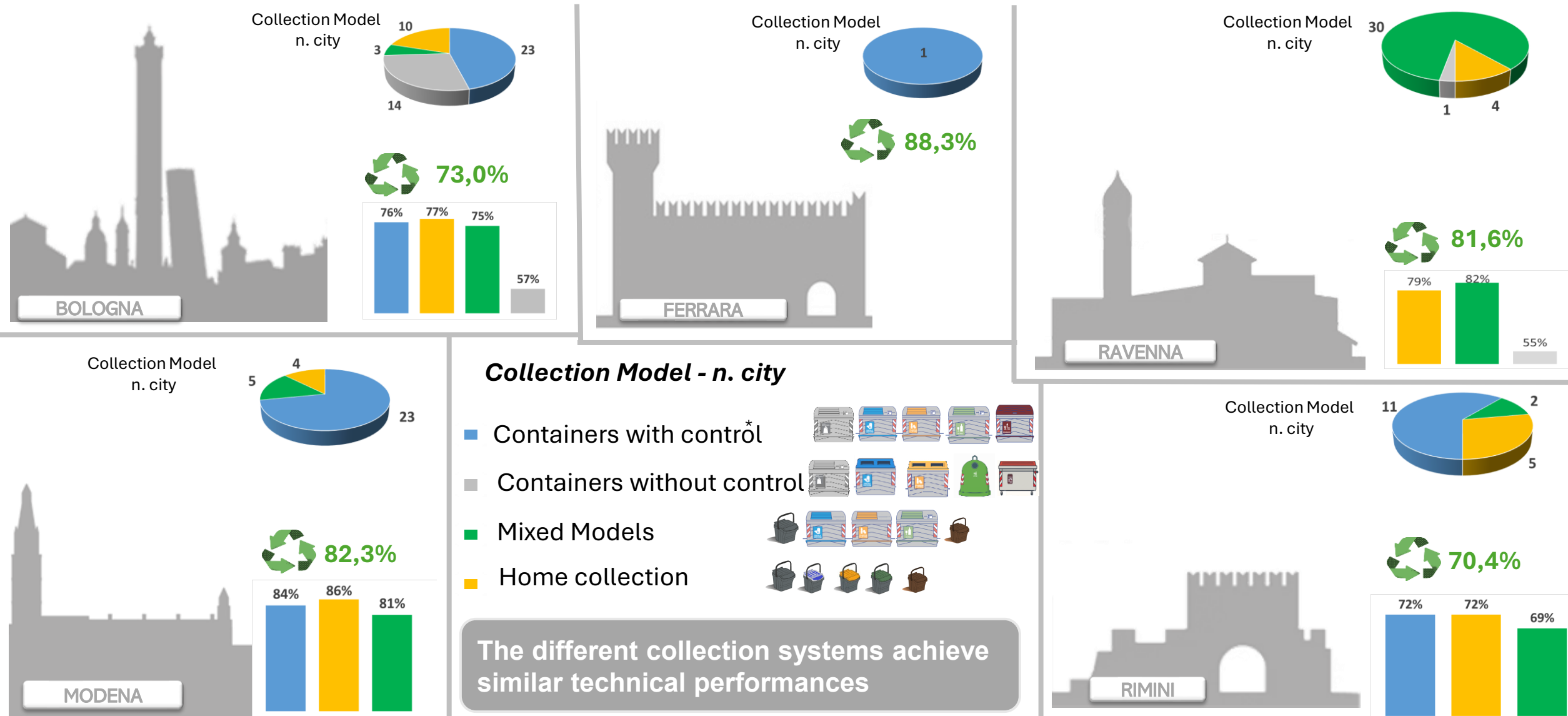
Change in the composition of collections

Typical trends *



* Modena city

Performance collection models - provincial scope



Focus- performance big cities



2023



2017



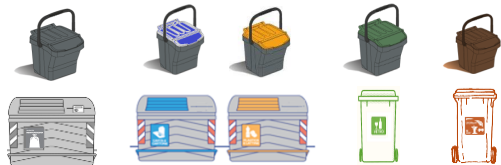
2022



2022



2024



Trend % waste sorting



79 %

+10%

+25%

+18%

+13%



Focus- performance big cities



Amount of waste collected [kg/citizen]

For eq.citizen

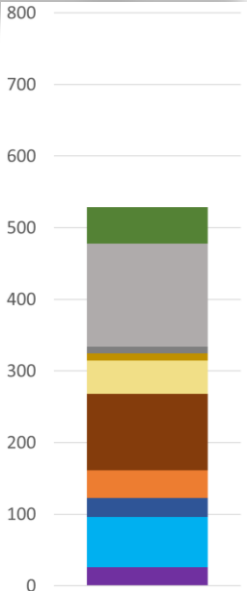
For citizen

- glass
- residual waste
- street cleaning
- puring
- plastic
- organic
- wood/bulki
- cardboard
- paper
- Other



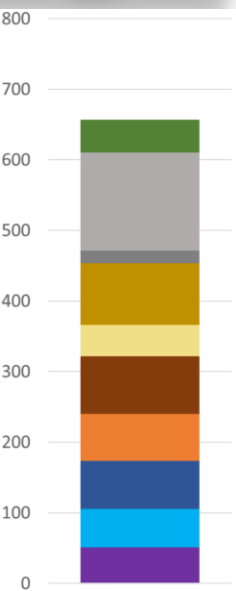
309

529



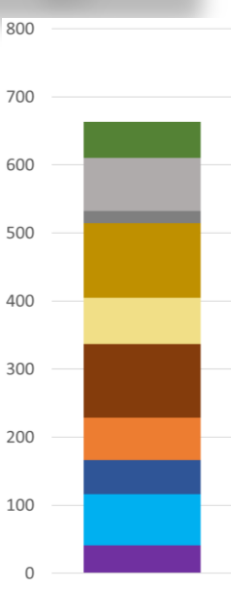
381

663



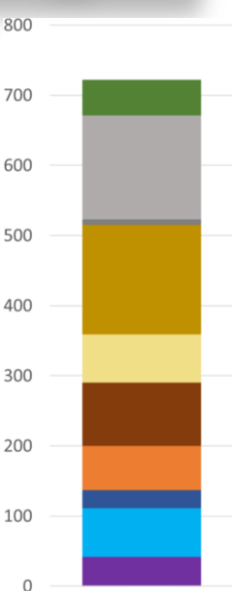
384

657



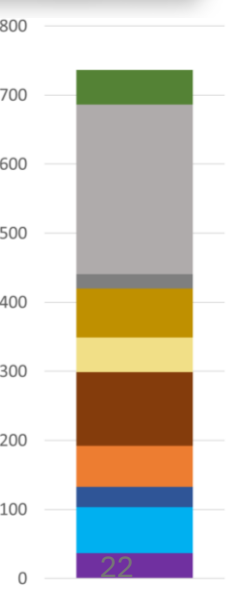
366

722

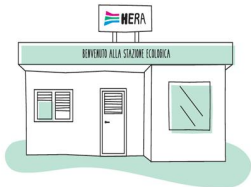


350

739



Performance other services



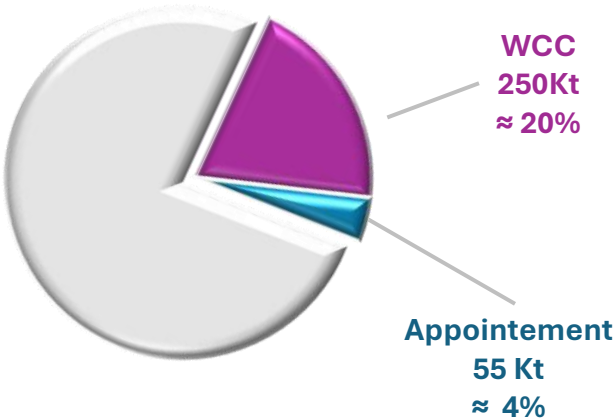
WASTE COLLECTION CENTER

Customer hour 521

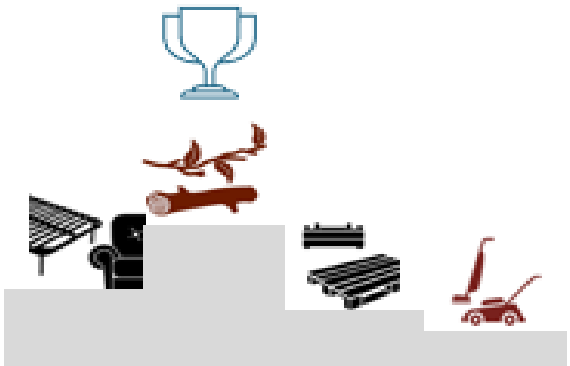
Accesses year 1,6 mil

Accesses day 4486

Tons day 441



Tons collected



- 1- Pruning
- 2 - Bulky
- 3 - Wood
- 4- Electrical and electronic waste



APPOINTEMENT

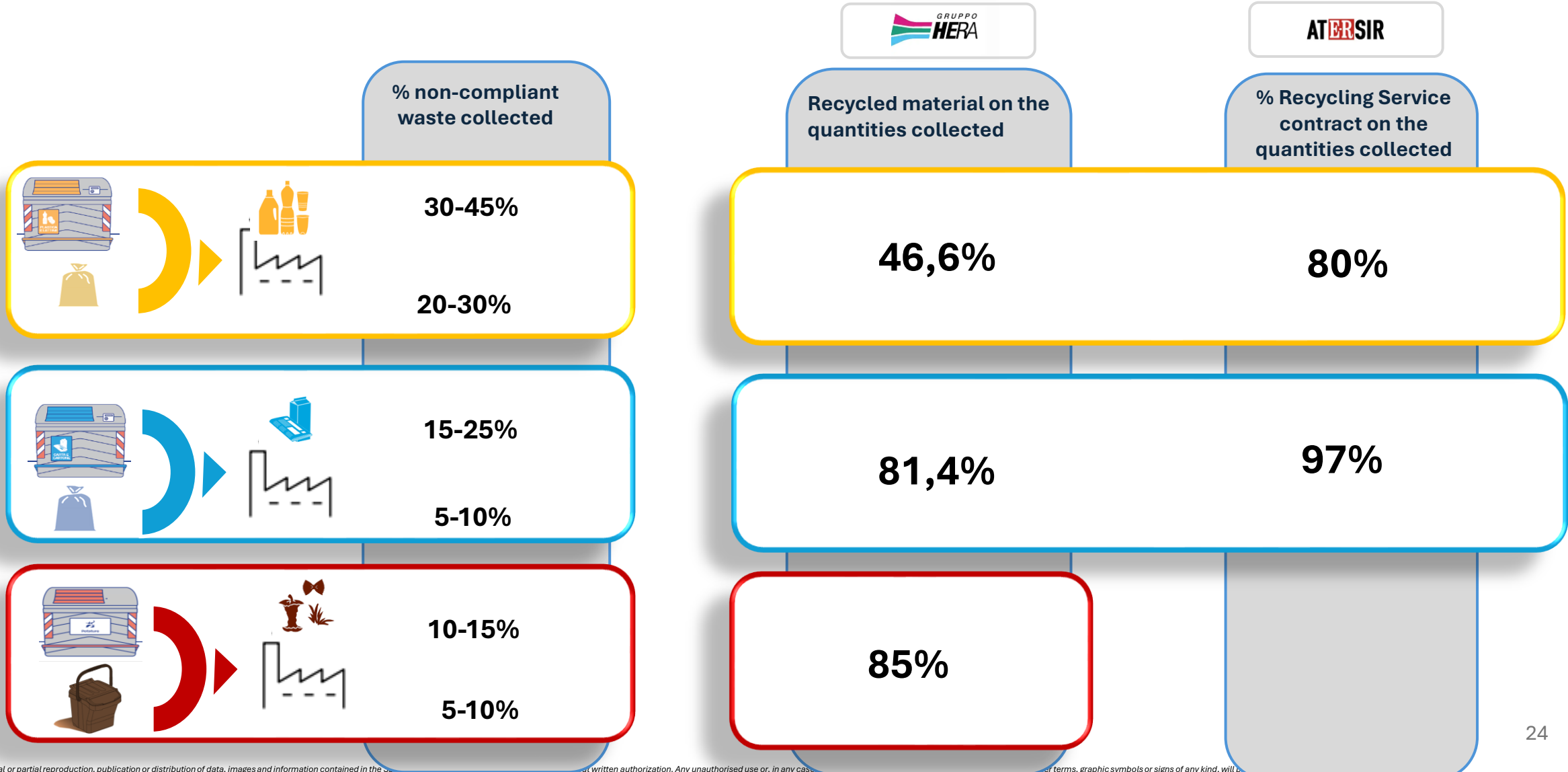
Customers day 900

Appointments 276k

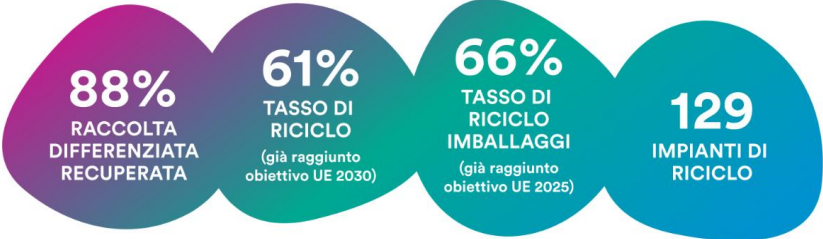
Time days 7

Tons day 110

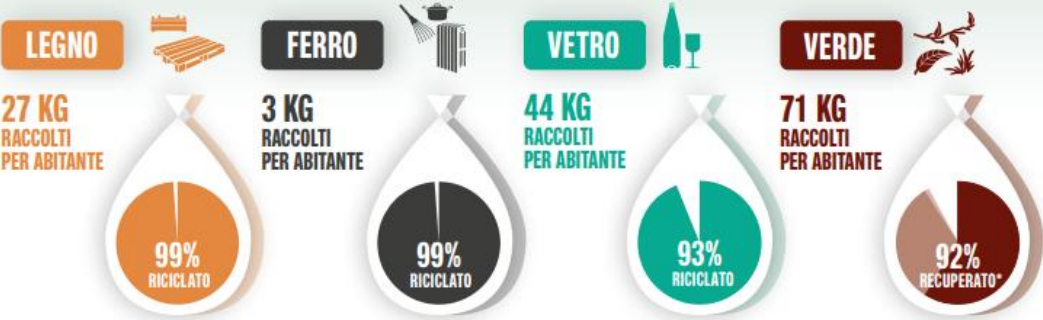
Quality of separate waste collection



Recycling rates



RACCOLTA DIFFERENZIATA E RICICLO:



*59% RICICLATO
*32% A RECUPERO ENERGETICO
*1% FRAZIONE ORGANICA STABILIZZATA

- | | | | |
|---|--|--|---|
| 9 IMPIANTI:
8 pannellifici
1 di preparazione al recupero | 17 IMPIANTI:
8 acciaierie
7 di preparazione al recupero
2 aziende di commercio | 5 IMPIANTI:
4 di produzione del vetro pronto forno
1 azienda di commercio | 22 IMPIANTI:
10 compostaggi
4 biodigestori
8 recupero di biomasse |
|---|--|--|---|

QUANTO, DOVE E COME?



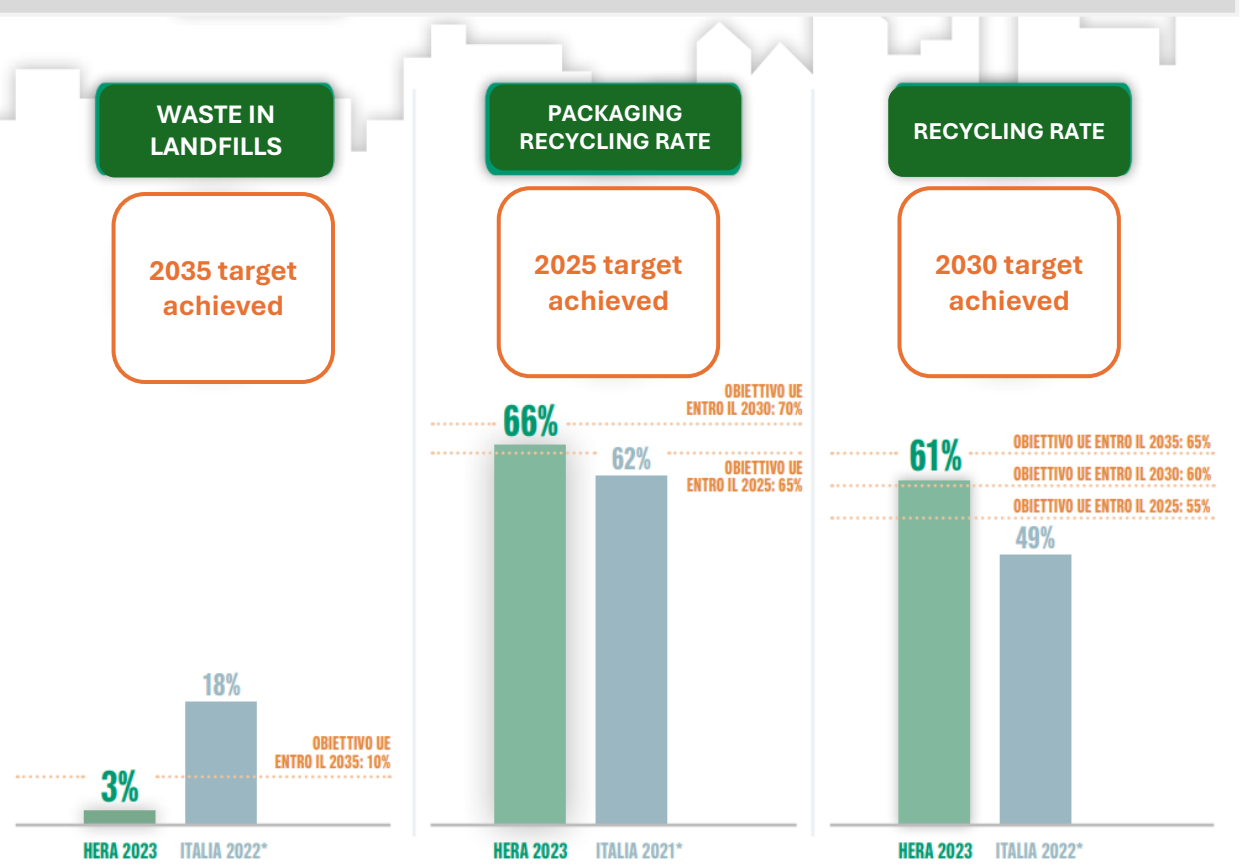
*80% RICICLATO
*5% FRAZIONE ORGANICA STABILIZZATA
*32% RICICLATO
*45% A RECUPERO ENERGETICO

- | | | | |
|---|---|--|--|
| 19 IMPIANTI:
12 di preparazione al recupero
7 aziende di commercio | 35 IMPIANTI:
28 cartiere
4 di preparazione al recupero
3 aziende di commercio | 14 IMPIANTI:
7 compostaggi
7 biodigestori | 45 IMPIANTI:
25 di produzione di plastica
20 di recupero energetico |
|---|---|--|--|

European challenges



A TERRITORY AHEAD OF THE EUROPEAN TARGETS



Data 2023

% EU target



2025

2030

2035

WASTE IN LANDFILLS

10%

PACKAGING RECYCLING RATE

65%

70%

RECYCLING RATE

55%

60%

65%

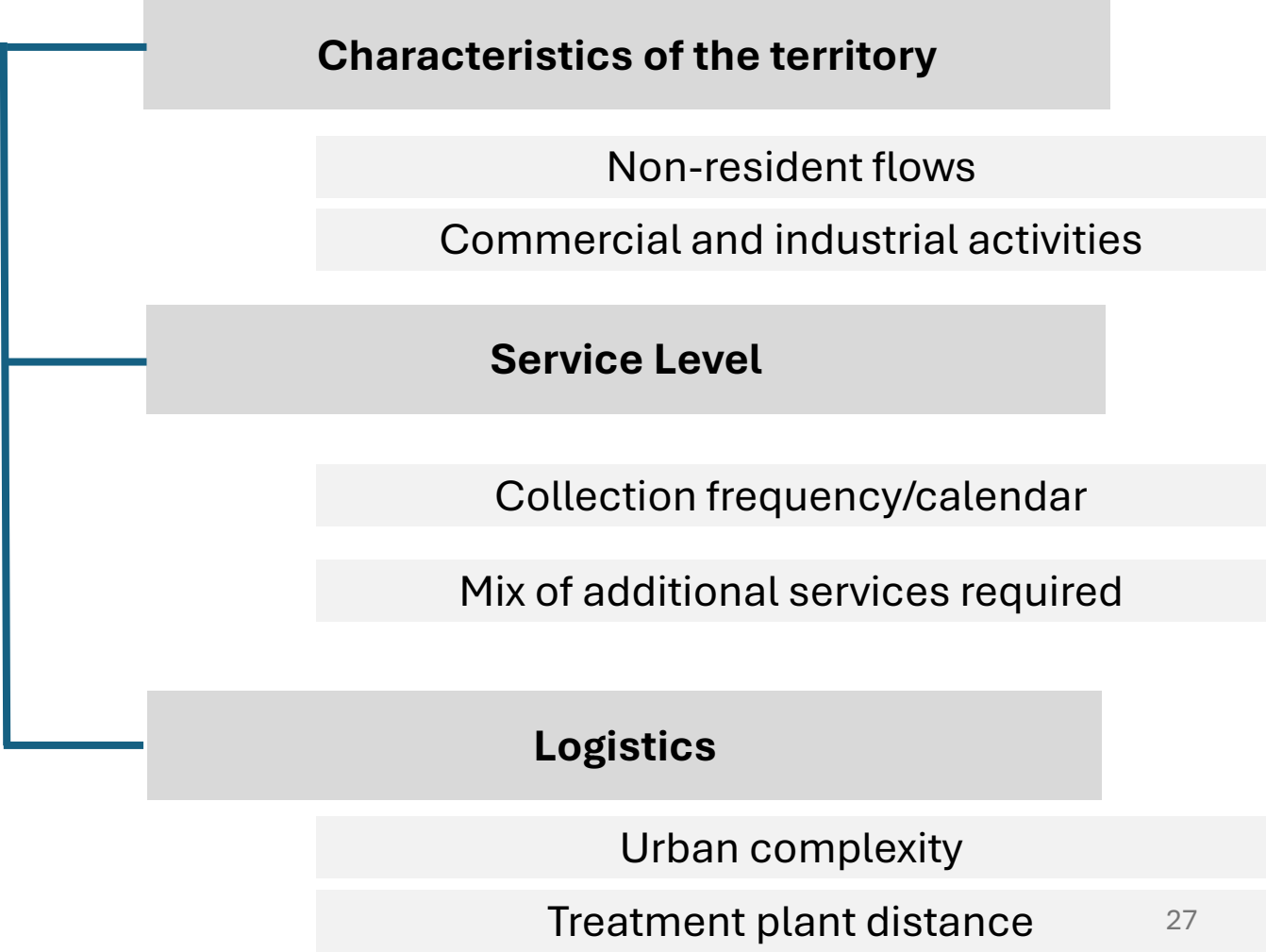
Economics



Below are some economic drivers of reference.

The costs represented through the following drivers are average and indicative values.

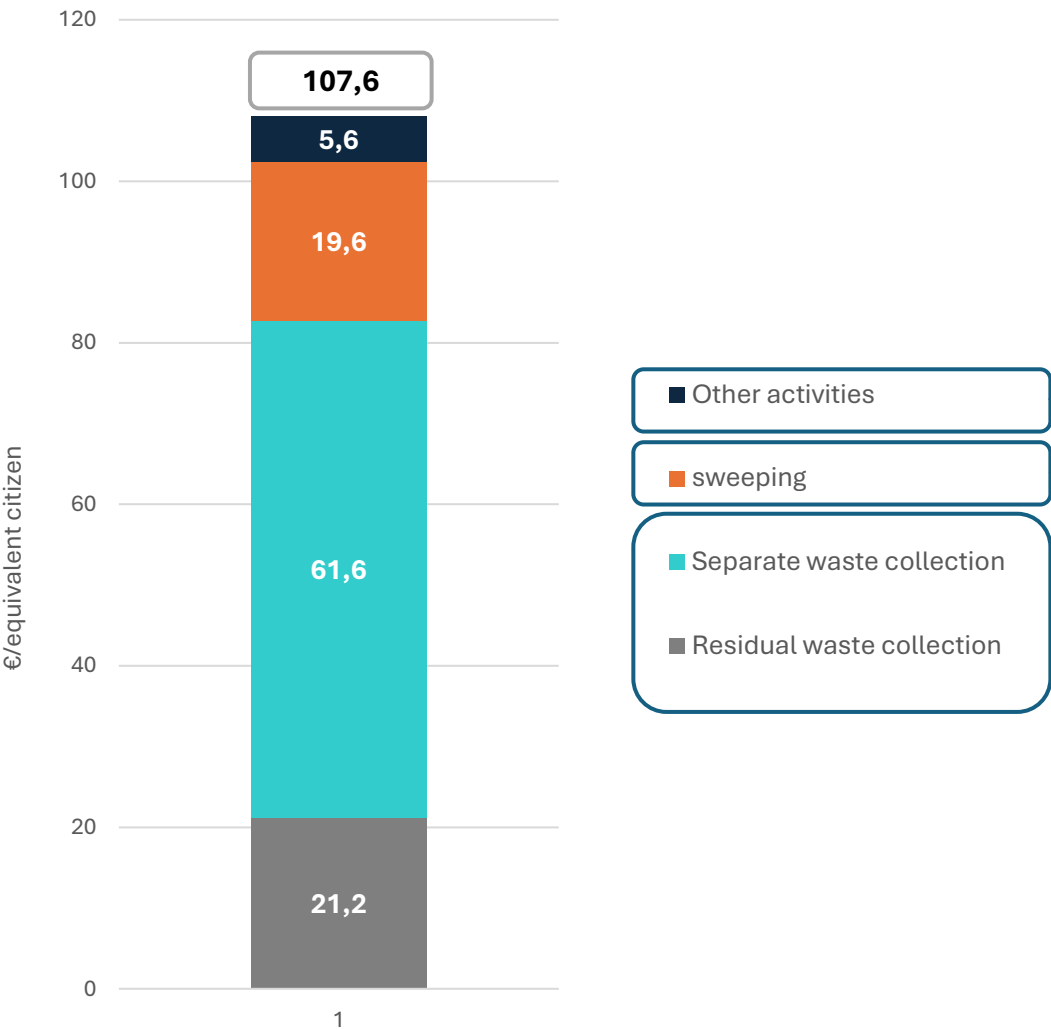
The operating cost of each area / municipality is influenced by several variables that can change, even significantly, the value €/citizen



Total service costs



€/equivalent citizen – full cost



Costs included:

- Post-mortem management of landfills
- Administrative costs assessment, collection and litigation
- Overhead costs

Costs included:

- Street sweeping and washing costs
- Collection of small illegal waste dumping
- Street washing
- Coordination costs



Costs included:

- Collection and transport costs
- Collection of big illegal waste dumping
- Costs of waste disposal and treatment (collection)
- Costs of waste disposal and treatment (sweeping, cemeteries and beaches)
- Coordination costs



Costs not included:

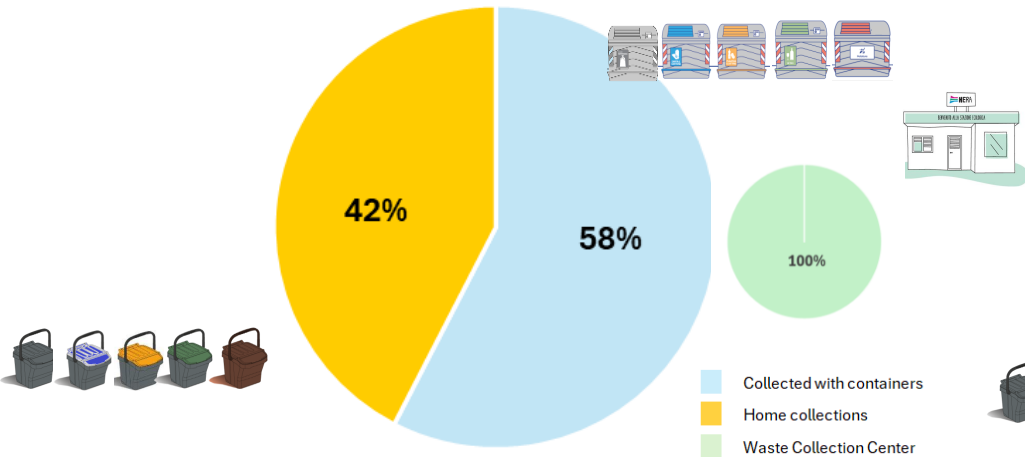
- Revenues by the sale of sorted waste

Operating costs breakdown

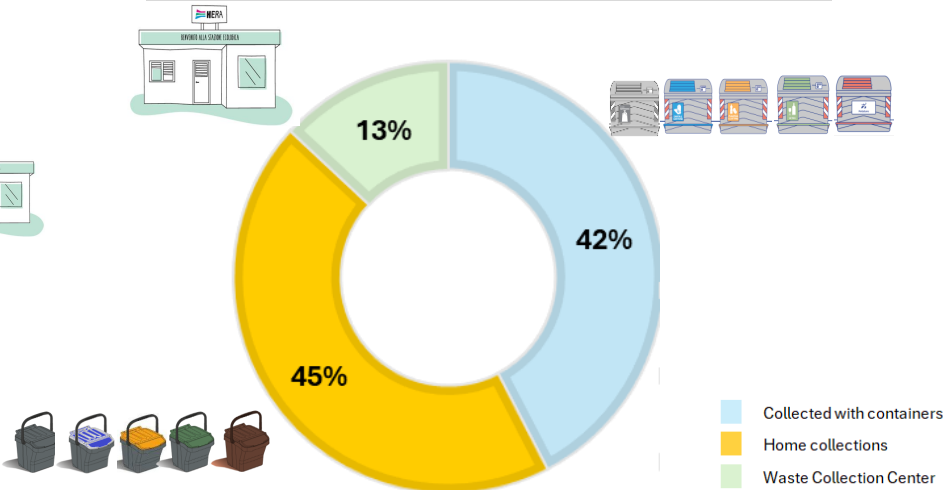


by collection method

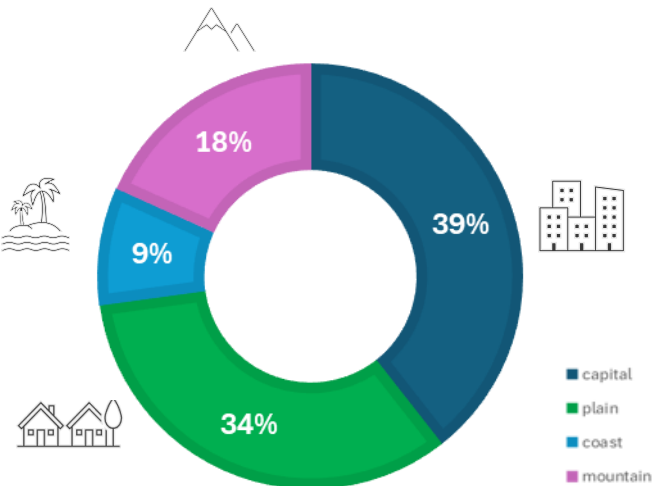
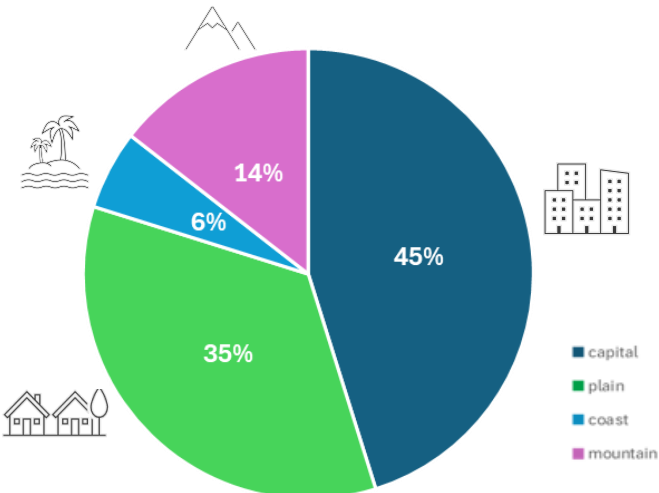
Citizens Served



Operating costs



by type of territory



Economics waste collection



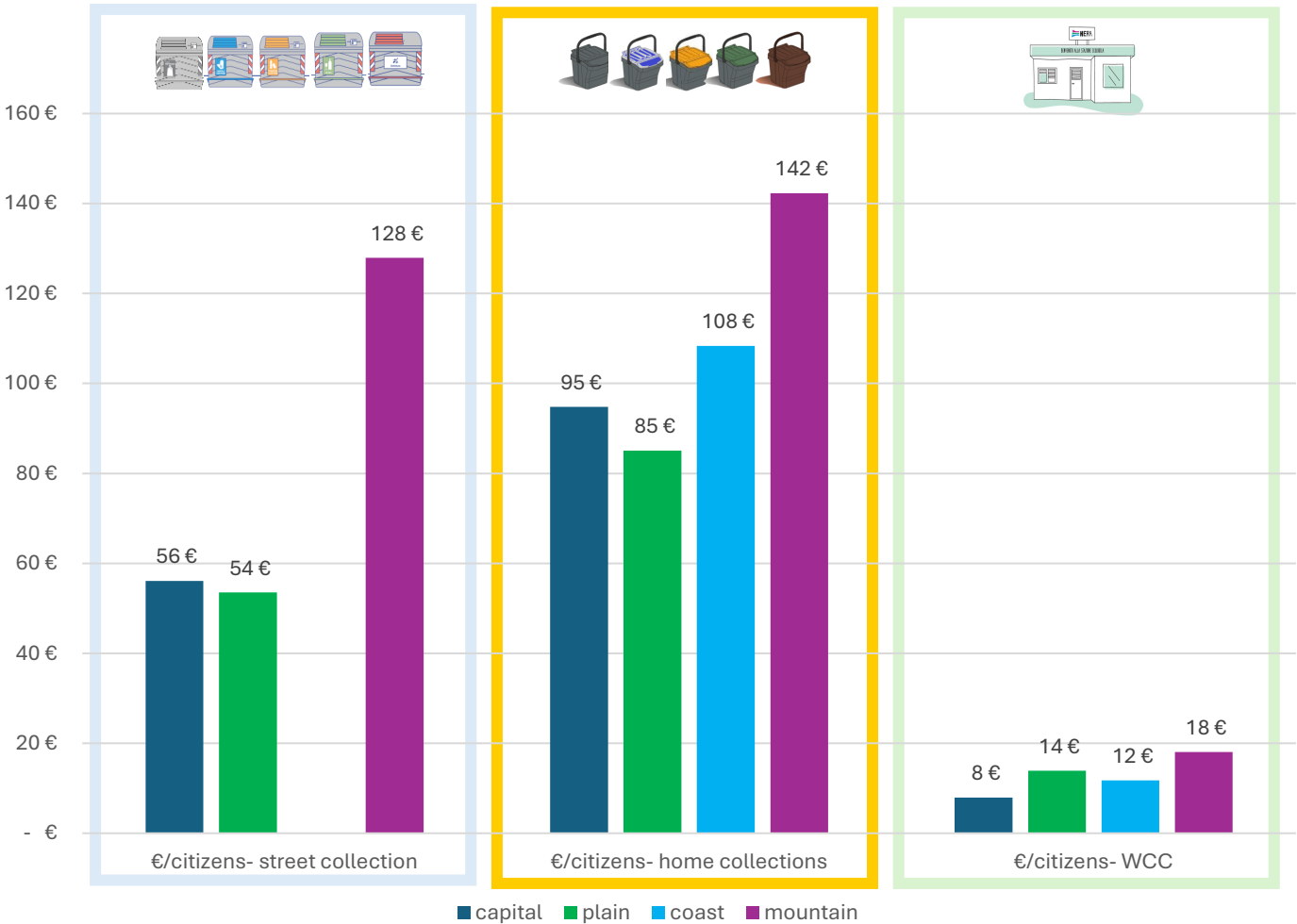
Costs included:

- Personnel
- Vehicles and Container (depreciation)
- Maintenance
- Coordination Costs

Costs excluded:

- Sweeping
- Litter Collection
- Services by Appointment
- Overhead costs

	Street collection	Home collection
€/citizen	62 €	90€
	West collection center	
€/citizen	11 €	
€/citizen TOT	72 €	101€



Economics Waste abandonment

small illegal
waste
dumping

$2,5 \div 6$ €/eq.
citizens

big illegal
waste
dumping

$1 \div 2$ €/eq.
citizens

Collection of small illegal waste dumping



The level of service required by the municipality affects the overall costs.

The increase in the percentage of sorted waste collections on average does not increase this phenomenon

The application of Pay as you throw, especially in the early years, can increase the illegal waste dumping effects

Collection of big illegal waste dumping



The trend of large illegal waste dumping has seen a decreasing dynamic, over time, in the face of an increase of the service level

Final considerations



The consolidation of results in reorganized municipalities , the completion of ongoing transformations and with our 100 treatment plants will enable the territory and the Hera Group to position themselves among the Italian leaders in waste management, anticipating the sustainability and innovation challenges set by EU objectives.

We have nearly reached — and will achieve by the end of the year — the separate waste collection targets set by the Emilia-Romagna region. We have almost completed the transformation of all municipalities to the new services defined by the concessions, and with this, all municipalities are now enabled to switch from a tax-based system to a tariff-based system using the “pay-as-you-throw” method. Currently, 50% of municipalities have adopted the TCP model, with a 10% annual increase.

The next goals to achieve are:

- **Reducing illegal waste dumping** through inspections, penalties, and education/information.
- Improving the quality of separately collected waste, **especially plastics**.
- Increasing citizen **engagement** in **urban cleanliness**.
- **Improving** our waste sorting and **treatment facilities**.
- Promoting **new technologies** to detect incorrect waste disposal (**Artificial Intelligence**).

We hope for a simplification in tariff management, similar to what has already occurred in the water sector, **by defining national tariffs with different characteristics** based on collection models and city types, but no longer differentiated by individual municipalities.

We also hope for greater support from municipalities in transferring the necessary **databases for identifying tax evaders** and improving the effectiveness of debt recovery.