



Camera di Commercio
Molise



European Union
European Regional
Development Fund

” How to stimulate secondary raw material markets”

***“State of waste management and recycling process in Italy:
valorisation of end-of waste and/or secondary raw materials”***

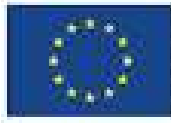
Sergio Baroni - Direzione Servizi Operativi – Director - HERAmbiente spa

Federico Foschini - Direzione Servizi Operativi – Senior Policy Advisor - HERAmbiente spa

20/21 March 2018/ 3rd Interregional Workshop



Camera di Commercio
Molise



European Union
European Regional
Development Fund

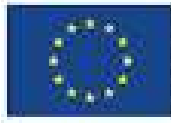


agenda

- **State of waste management in Italy**
- **Herambiente (Hera Group) waste management performances and valorization of end of waste**
- **European scenario and Circular economy**



Camera di Commercio
Molise



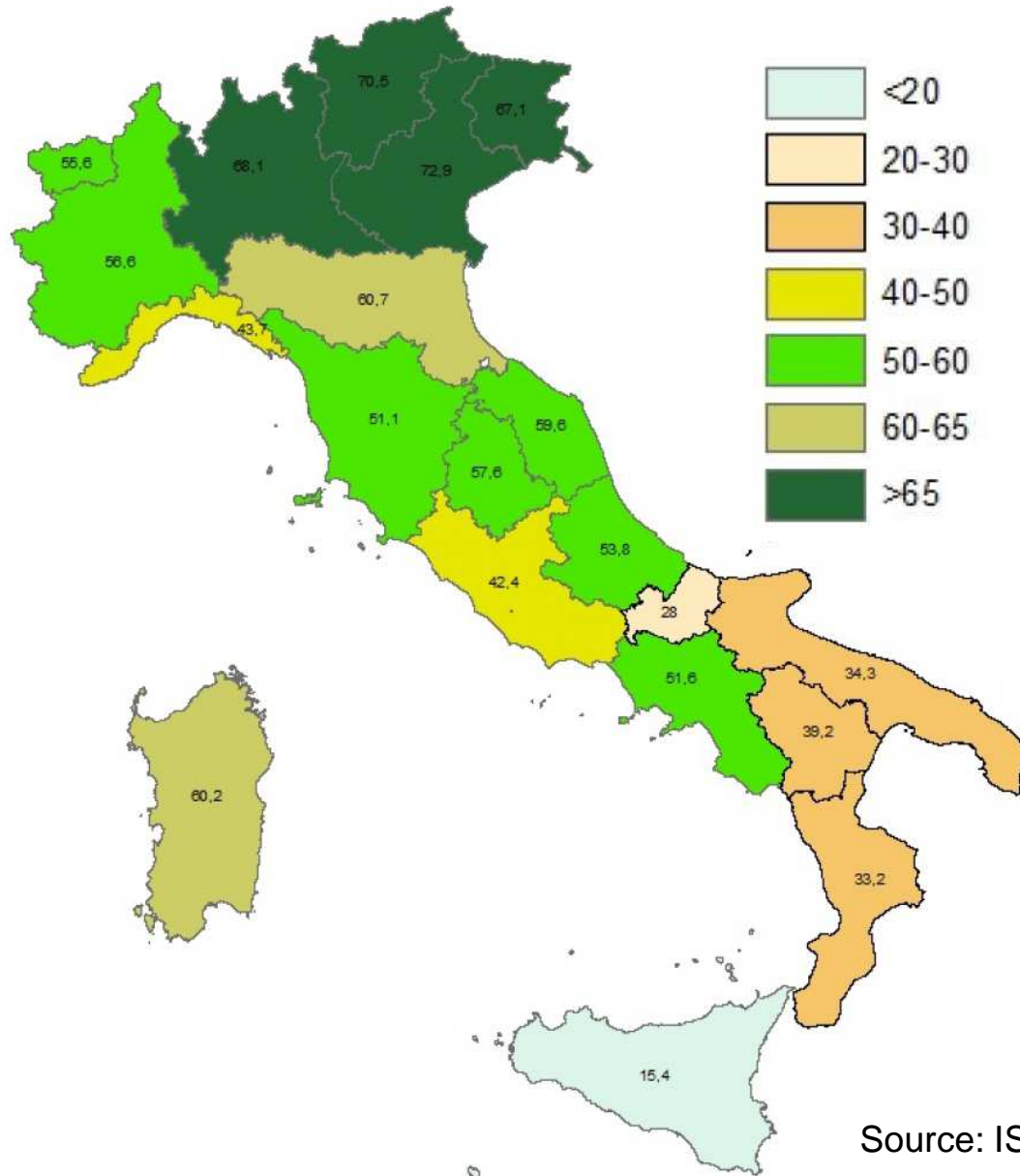
European Union
European Regional
Development Fund



agenda

- **State of waste management and recycling process in Italy**
- Herambiente (Hera Group) waste management performances and valorization of end of waste
- European scenario and Circular economy

Separate collection of municipal waste, 2016

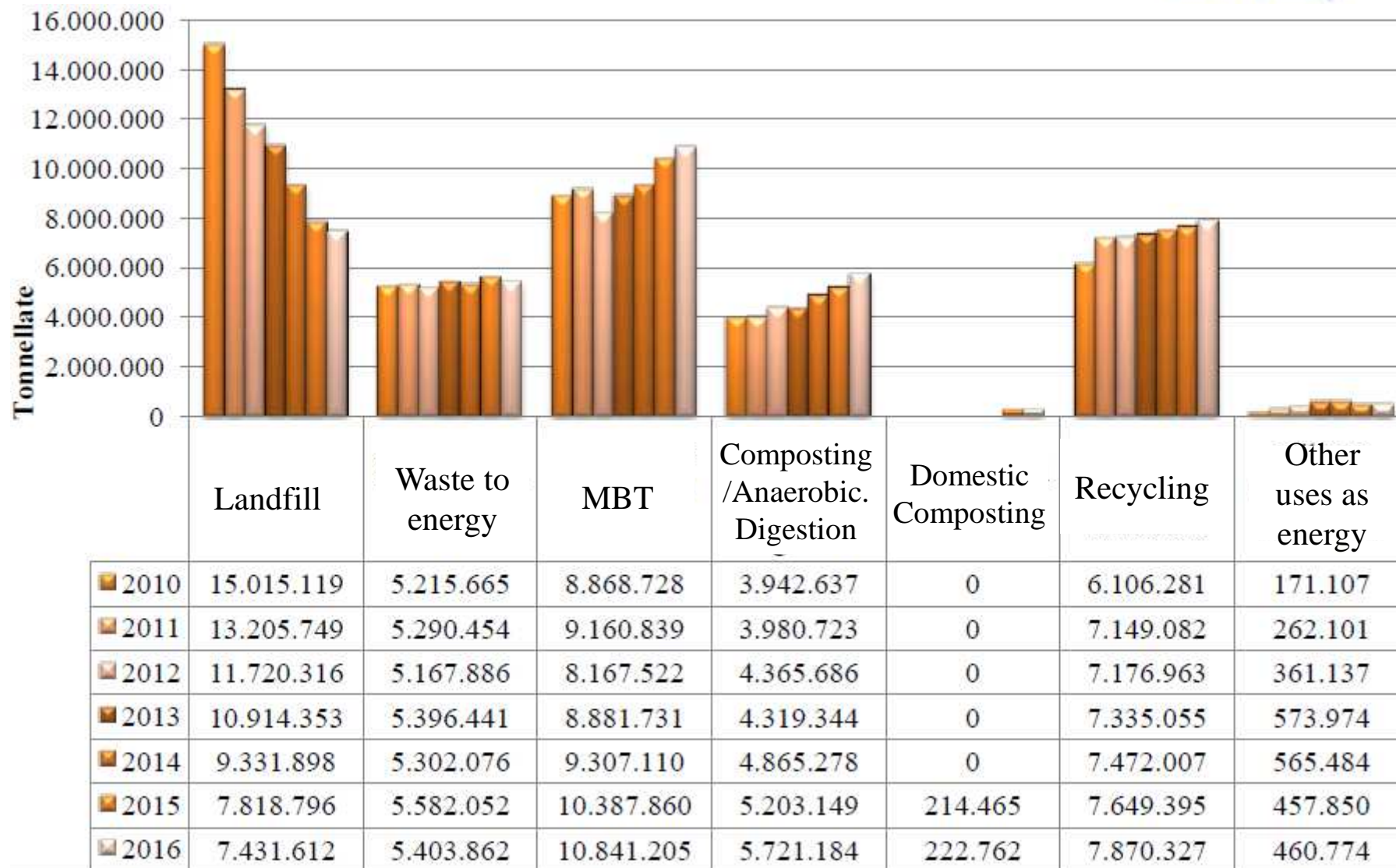


Italy 52,5 %

- North 64,2 %
- Centre 48,6 %
- South 37,6 %

Separate collection plays a fundamental role to enhance recycling and material recovery, particularly for organic waste and the dry fractions of MW

Italy – Municipal waste management trends 2010-2016



Source: ISPRA Rapporto Rifiuti Urbani, 2017

Waste management plants distribution

Composting plants



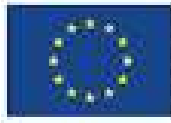
Waste to Energy



Source: ISPRA Rapporto Rifiuti Urbani, 2017



Camera di Commercio
Molise



European Union
European Regional
Development Fund



agenda

- State of waste management and recycling process in Italy
- **Herambiente (Hera Group) waste management performances and valorization of end of waste**
- European scenario and Circular economy

HERA group – main achievements

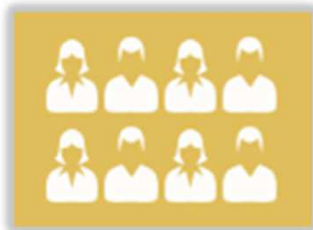
4.635
millions €
INVESTMENTS
IN 13 YEARS



1° Largest operator at national level
for **WASTE MANAGED**



2° Largest operator at national level
in the **INTEGRATED WATER CYCLE**



4 millions
CITIZENS
served



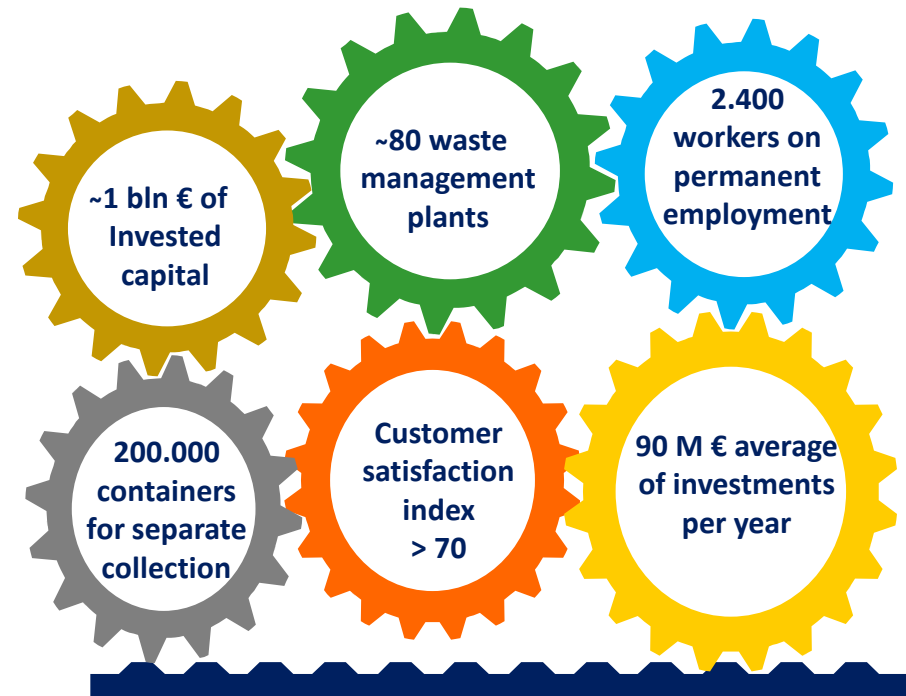
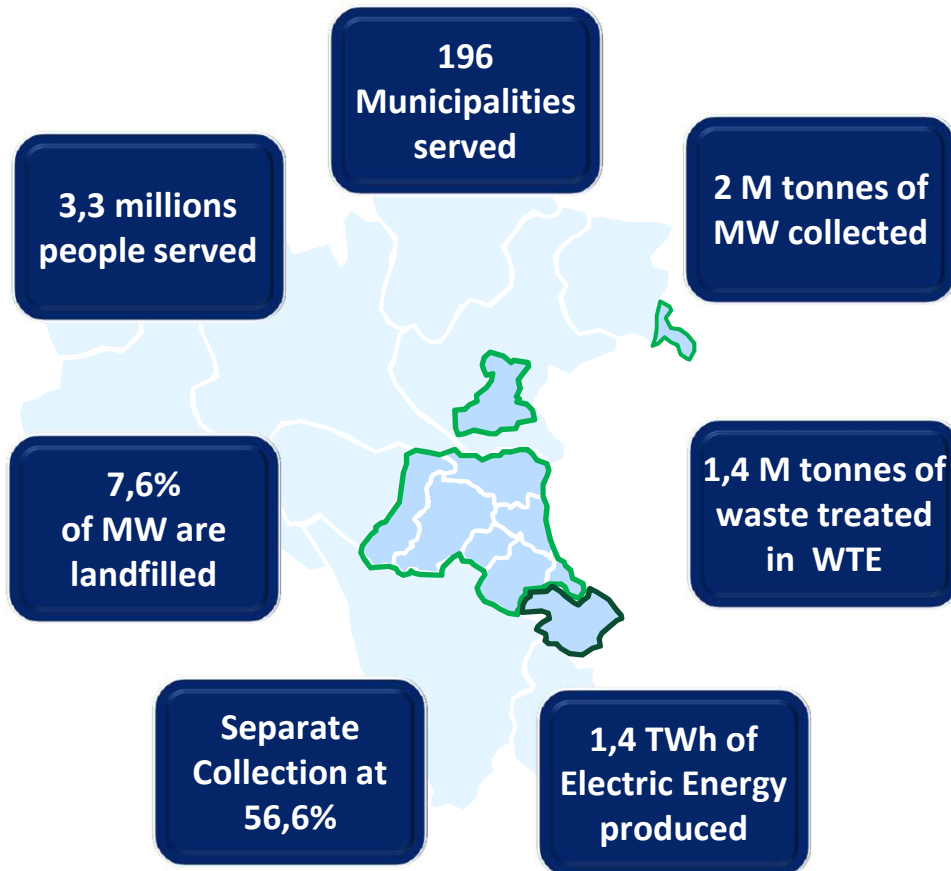
3° Largest operator at national level
in **GAS DISTRIBUTION**

8.575
WORKERS
96,6% with
permanent
employment

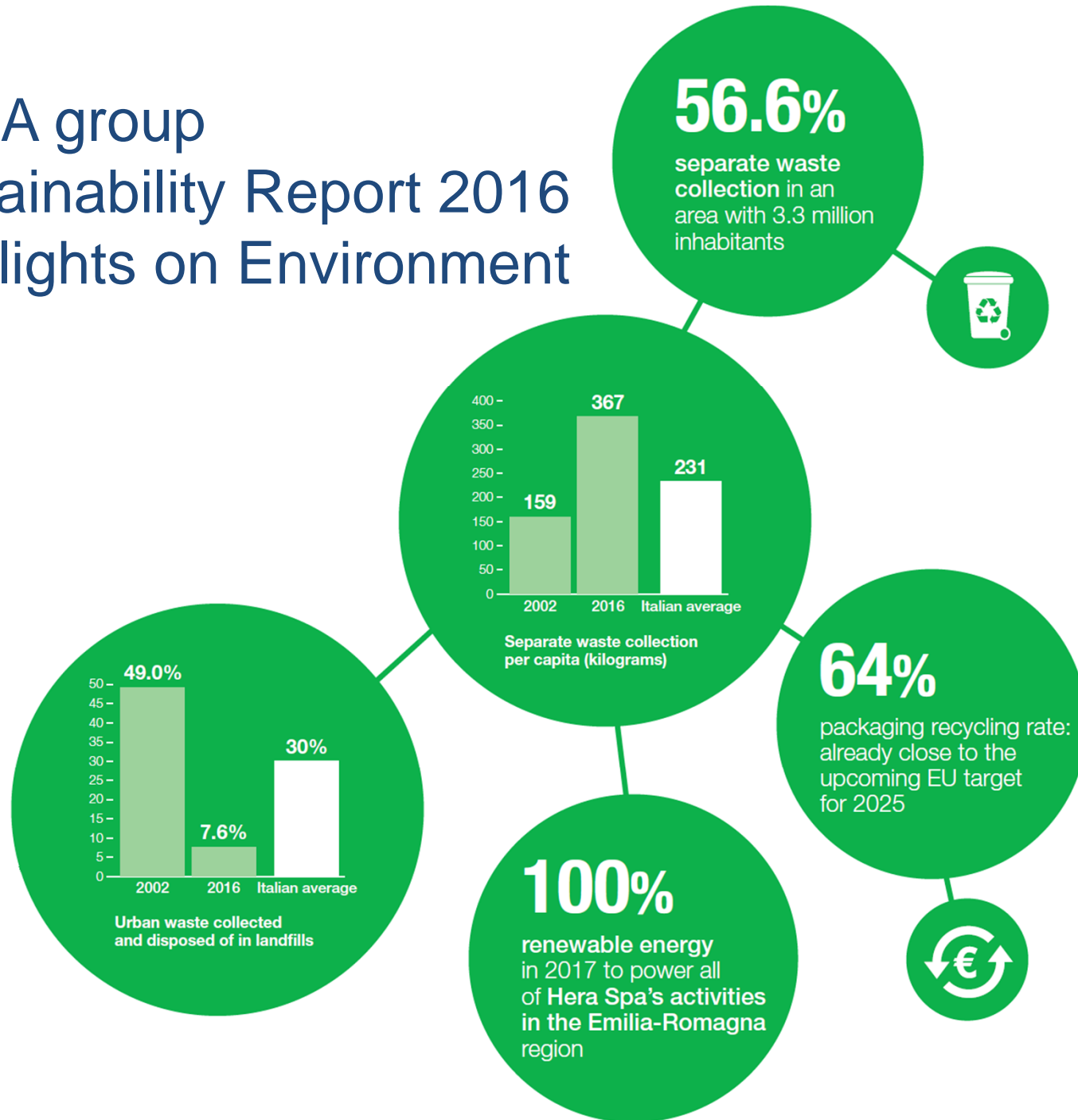


4° Largest operator at national level
for **ELECTRIC ENERGY** sold

HERA group - Fact and Figures on Environmental services



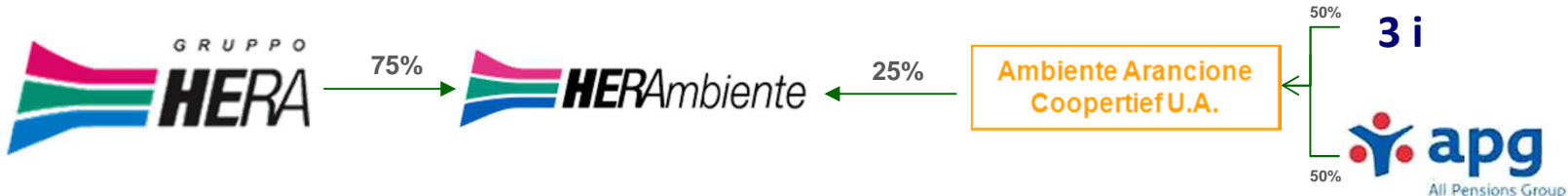
HERA group Sustainability Report 2016 Highlights on Environment



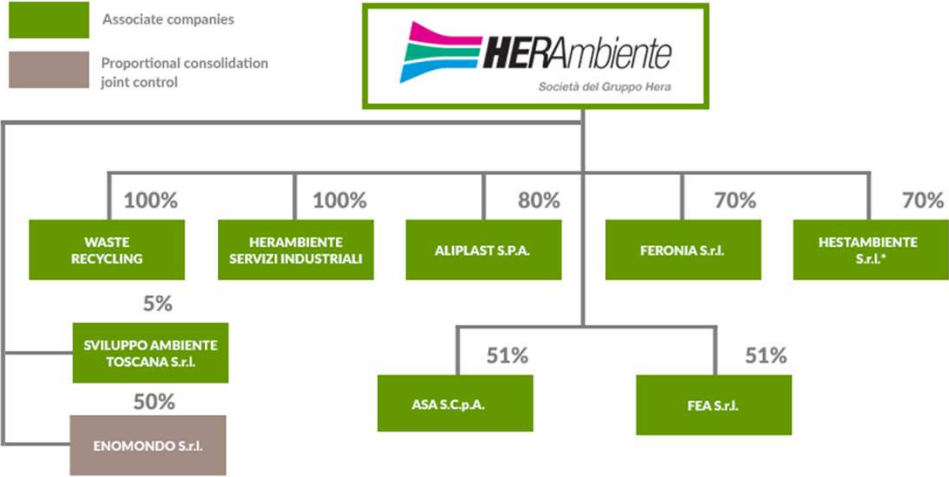
Herambiente group



Responsible for organising and managing all the operational and commercial activities of the waste treatment, recovery and disposal plants of the HERA group.
 Herambiente is currently the biggest Italian operator in waste treatment by number of plants and volume of waste treated, and is an industry benchmark throughout Europe.



Main developments



HERAmbiente Group



Key numbers



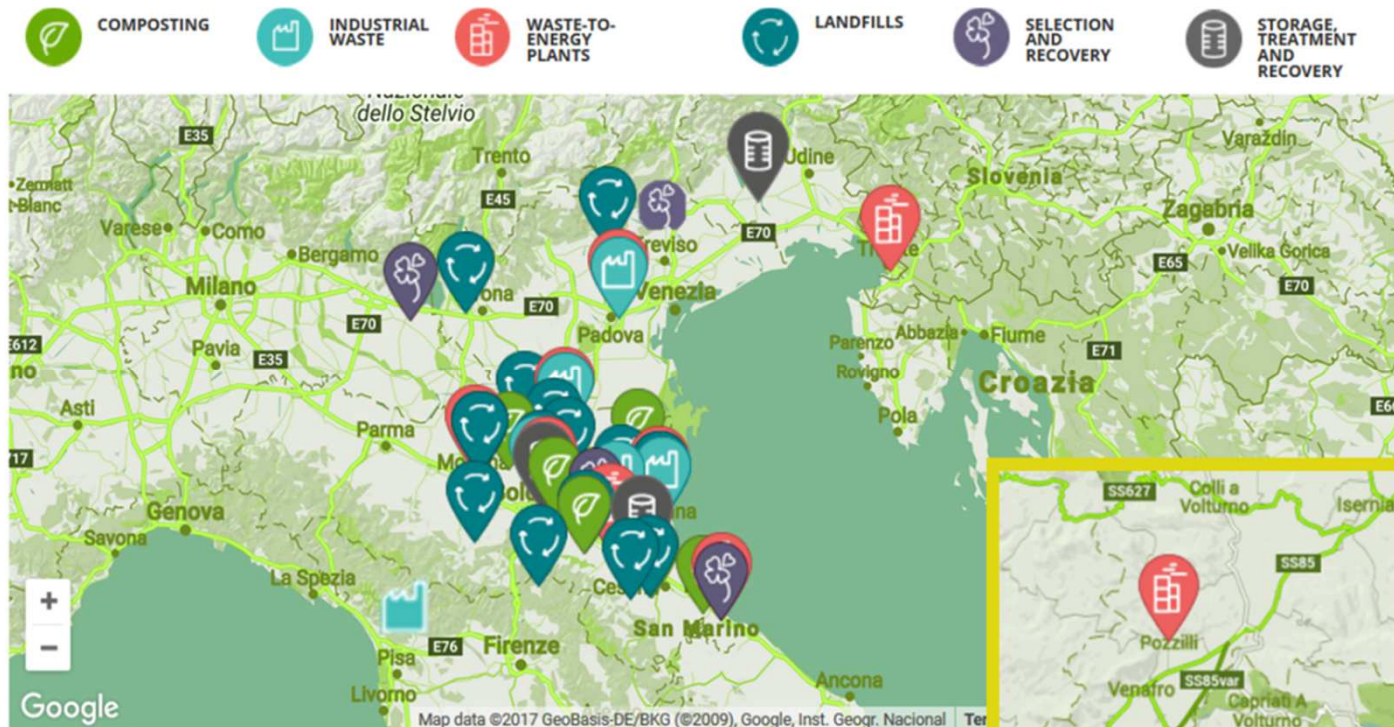
Certifications



HERAmbiente Plants Fleet

WTE	10
Thermotreatment	2
Composting	7
Anaerobic Digesters	4
Sorting	3
Selection/recovery	15
Chemical Physical	14
Inertization	5
Sludge treatment	3
Material transformation	3
Storage	18
Landfills	7
TOTAL	91

- Since 2002, HERA Group (and then Herambiente Group) started a revamping and up-grading plan of own plants fleet (**total capex 2004-2016: ≈ 1 Bn€**)
- First step was focused to WTEs, fully renewed to minimize their environmental impact and, at the same time, increasing energy production and efficiency;
- **Today and future focus and investments are directed to recycling, recovery of material and energy savings.**

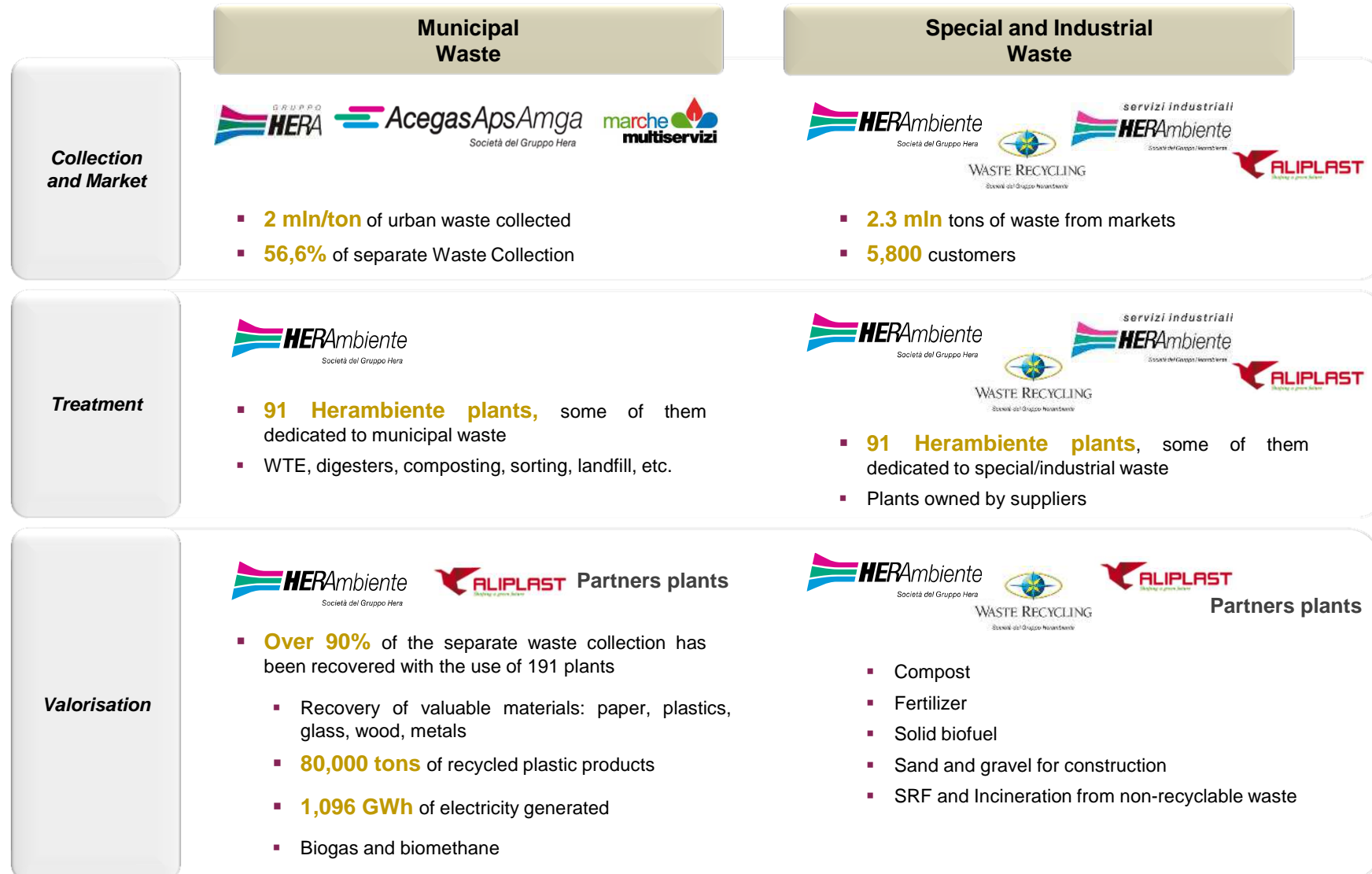


The total recovery capacity is greater than the disposal

Hera Group: Circular Economy



Integrated Waste Management System



HERAmbiente plants – Digester & Composting

From organic waste to fertilizers & energy



Composting, biostabilization and RDF/CSS production

Plant Name	Treatment Year capacity t	Fertilizer	Biostab.	Anaerobic Digester	RDF CSS	Prod. e.e.
<u>Rimini Composting and biostabilization plant</u>	57.000	✓	✓	✓		✓
<u>Lugo (RA) Composting and biostabilization plant</u>	60.000	✓	✓	✓		✓
<u>Ostellato (FE) Composting and biostabilization plant</u>	28.000 75.000	✓				
<u>Ravenna Stabilization and RDF production plant</u>	23.000 180.000		✓		✓	
<u>Ozzano dell'Emilia composting plant</u>	28.000	✓				
<u>S. Agata Bolognese (BO) composting plant and stabilization plant</u>	60.000 70.000	✓		✓*		
<u>Cesena composting plant</u>	55.000	✓		✓		✓
<u>Tremonti Imola (BO) Separation and Stabilization plant</u>	70.000		✓			
<u>Enomondo Faenza (RA) composting plant**</u>	30.000	✓				

* Start up forecast in 2018 with biomethane

** Not consolidated in Herambiente Group

HERAmbiente plants – Material selection & recovery













Plastics, paper, glass & metals sorting plants

		Year treatment capacity t	
Solid waste Sorting plants	Coriano (RN) Sorting plant		96.000
	Mordano (BO) Sorting plant		67.500
	Voltana (RA) Sorting plant		90.000
	Modena Sorting plant		96.800
	Ferrara Sorting plant		90.000
	Granarolo dell'Emilia (BO) Sorting plant		100.000
	S. Croce Sull'Arno (PI) Sorting plant		70.000
	SRF	SRF production plant Castiglione delle Stiviere (MN)	
			Material recycling, manufacturing plants
			Energy recovery, cement kilns

WASTE INPUT: Municipal & Commercial I Waste (separate collection of municipal waste, industrial waste, etc.)
 FINAL DESTINATION: "Material Recovery Consortia" (CONAI, COMIECO, COREVE, RILEGNO, COREPLA, CIAL)

HERAmbiente Plants - WTE

Energy Recovery from waste and biomass

			N° Lines	Power	Authorized capacity	Installed power	District heating/ power recovery
WTE	WTE Ferrara		2	55,8 MW	130 Kt	12,8 MW	✓
	WTE Forlì		1	46,5 MW	120 Kt	10,5 MW	✓
	WTE Ravenna		1	27,80 MW	56,5 Kt	6,3 MW	
	WTE Rimini		1	46,5 MW	150 Kt	10,5 MW	
	WTE Modena		1	78,0 MW	240 Kt	18,6 MW	
	WTE FEA Bologna		2	81,4 MW	220 Kt*	22,0 MW	✓
	WTE Pozzilli (IS)		1	49,0 MW	93,5 Kt	13,5 MW	
	WTE Hestambiente Trieste		3	67,3 MW	197 Kt	14,9 MW	
	WTE Hestambiente Padova		3	72,6 MW	600 t/g*	17,9 MW	
	ENOMONDO** (RA) Biomass Plant		1	44,5 MW	114 Kt	13,7 MW	✓

More than 80% of IBA (output of WTE plants) are recovered in specific plants (outside Hera group)

* Linked to the thermal load, that is to the calorific power of the in- housing waste

** Not consolidated in Herambiente Group

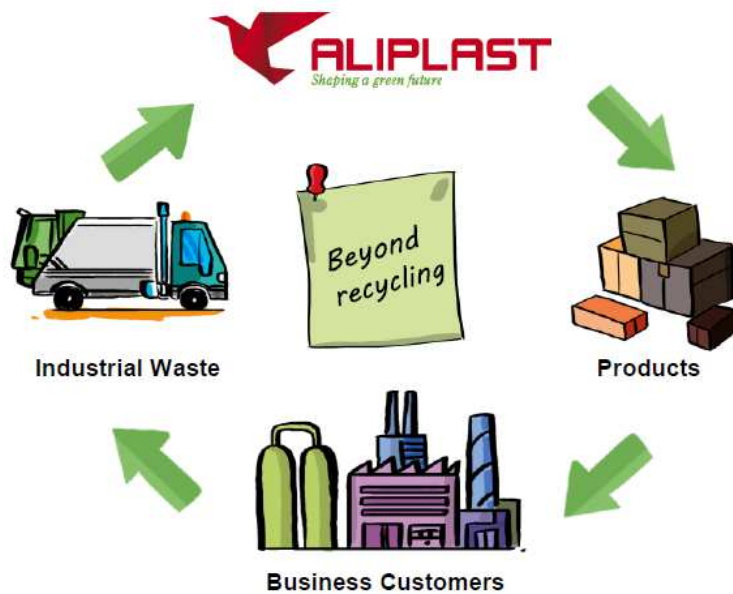
WtE Pozzilli

- ✓ Energy recovery (R1 operation) of 93.500 t/y of SRF
- ✓ State-of-the-art technology
- ✓ BATs implemented
- ✓ Emissions available on-line
- ✓ EMAS & OHSAS certification
- ✓ Environmental Monitoring plan
- ✓ IBA (after screening and metals separation) are recovered in cement kilns

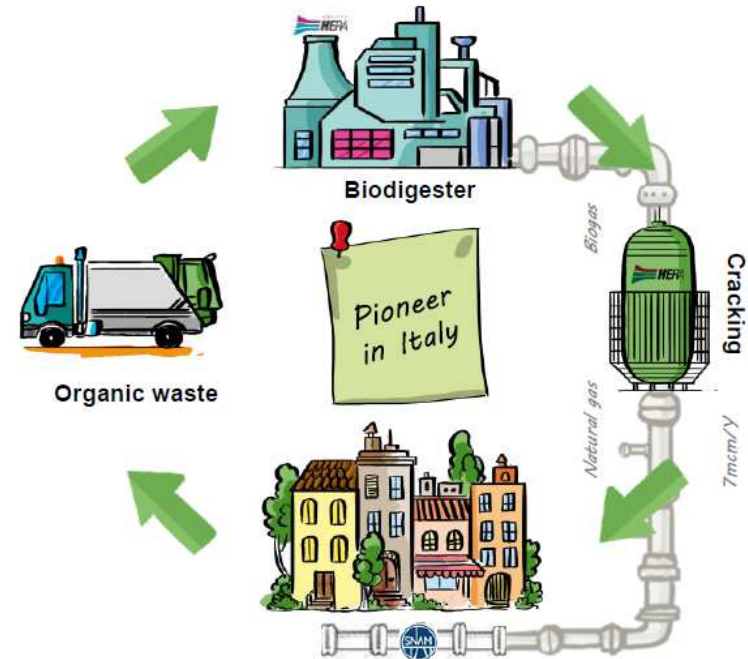


New horizons of our waste management

Aliplast: a step ahead in circular economy



Pioneering transformation of Biogas into methane



Contributing to Energy & Resource efficiency

Aliplast: Go forward in the value chain



- **HERAmbiente**, with the acquisition of **Aliplast Group** (a leader in the recycling of plastic as polyolefins and PET) consolidated its presence on the market with a distinctive and unique feature, a tangible element of circular economy, offering clients reliable and integrated solutions capable of completing and **concluding the virtual circle of sustainability**: from the collection and recycling of plastic waste scrap left over from production to the regeneration of new plastic products.

THE MANUFACTURING CYCLE

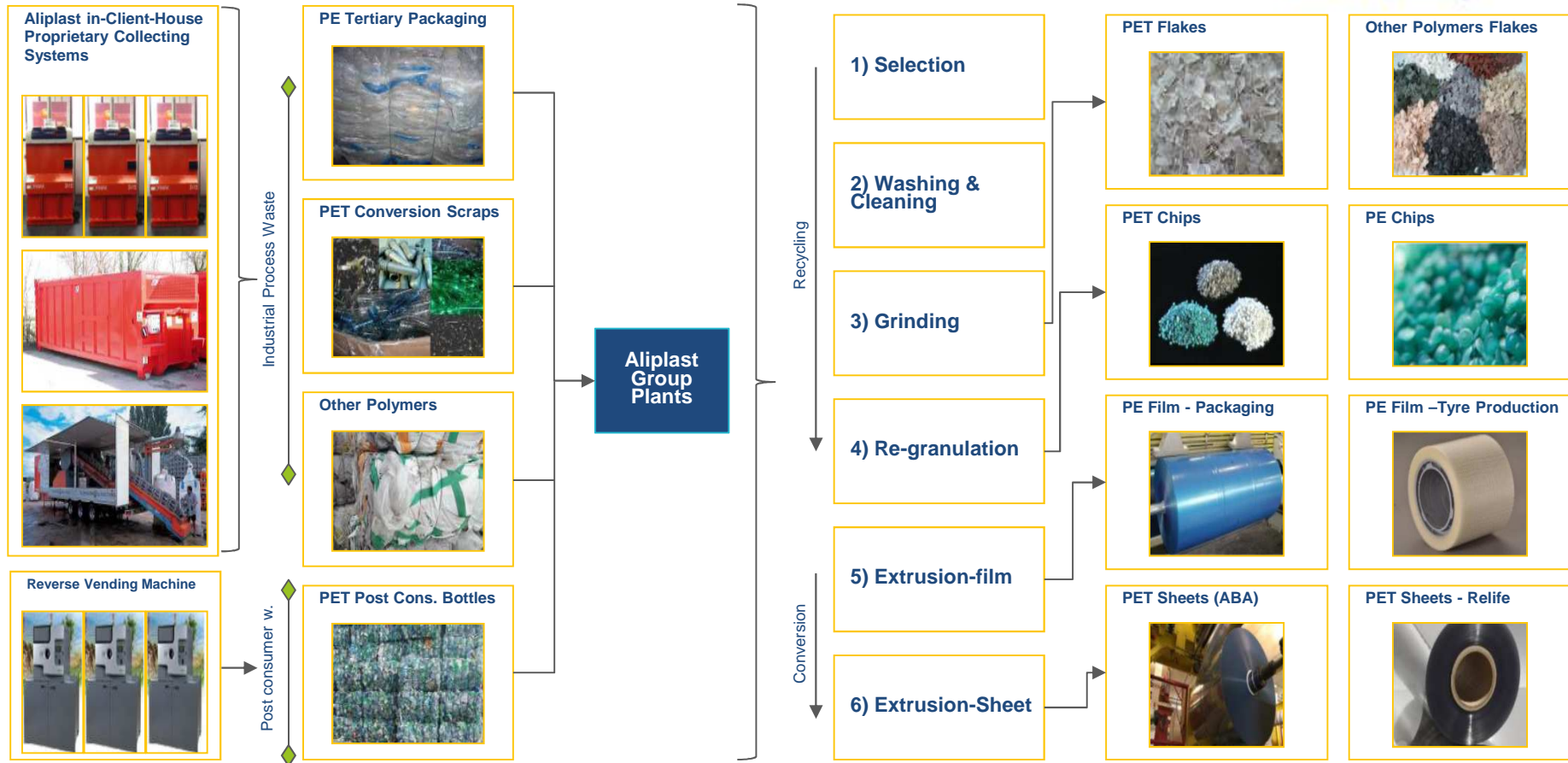
- Aliplast is a world leader in the manufacturing of regenerated polymers, flexible polyethylene (PE) films, and rigid PET films.
- **It is the first company in Italy to have achieved complete integration throughout the lifecycle of plastics**: in addition to the manufacturing and marketing of packaging materials, made in large part with plastic recycled in-house, it provides environmental services such as the management and collection of packaging waste and by-products, which feeds the company's advanced in-house **recycling processes to obtain regenerated polymers, which are then used in manufacturing processes or marketed abroad.**

KEY NUMBER

- 9 companies forming an international Group:
 - ✓ Italy: Aliplast (TV), Umbroplast (PG), Cerplast (MO), Alimpet (NO), Variplast (TV) e Alipackaging (TV)
 - ✓ Europe: Aliplast France (St. Symphorien d'Ozon e La Wantzenau), Aliplast Iberia - Onda (Castellòn) e Aliplast Polska - Lublin (PL)
- 80.000 tonnes of plastics processed each year
- 115 million euros in turnover in 2016 for the Group
- 350 employees of the Group.



Aiplast: Go forward in the value chain



Waste Collection/Purchase

Waste Recycling/Conversion

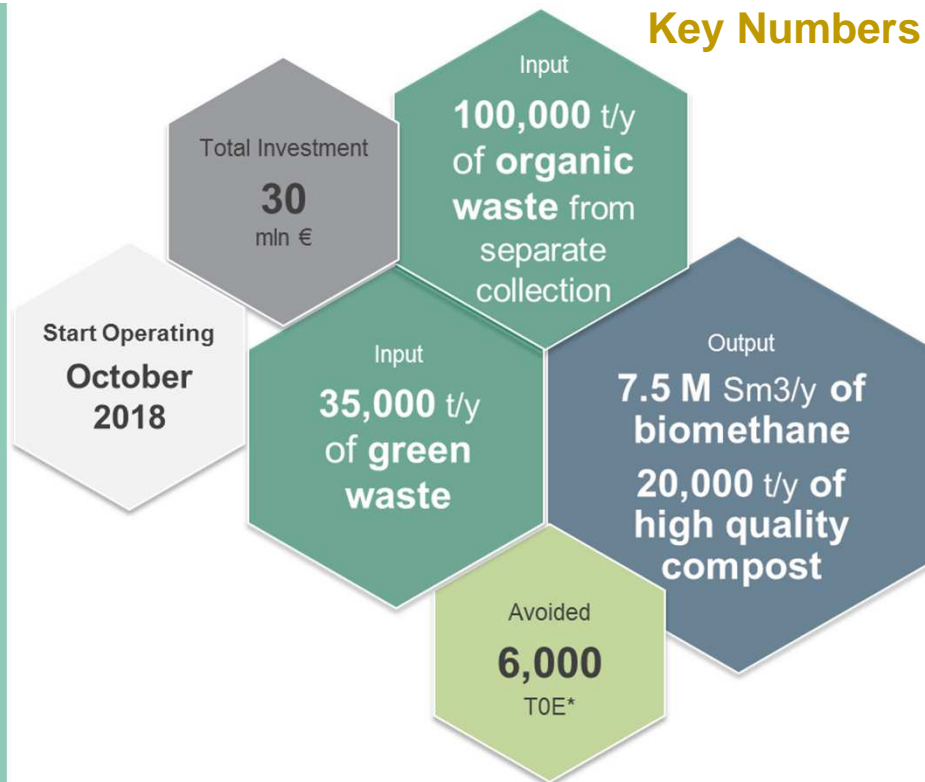
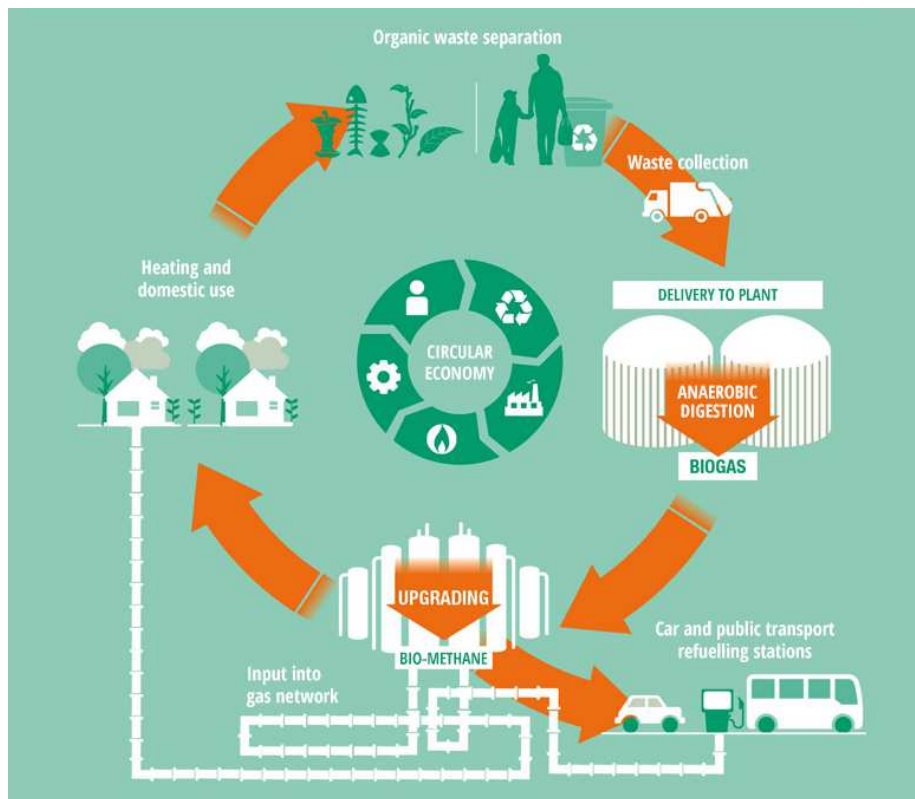
Finished products

From organic waste to biomethane



For years, HERAmbiente has already been producing biogas, from landfills and digesters, for renewable electricity generation (by gas engine).

New projects are focused on biogas up-grading and refining to produce biomethane, entirely similar to the natural gas that currently flows onto the gas grid connecting house & industrial users, and that fuels cars and transports.



A virtuous circle that begins with families and returns to citizens is possible by a new plant that HERAmbiente is building in S. Agata Bolognese (BO) within 2018, the first multi-utility in Italy to realize this project.

Innovative projects – HERA group

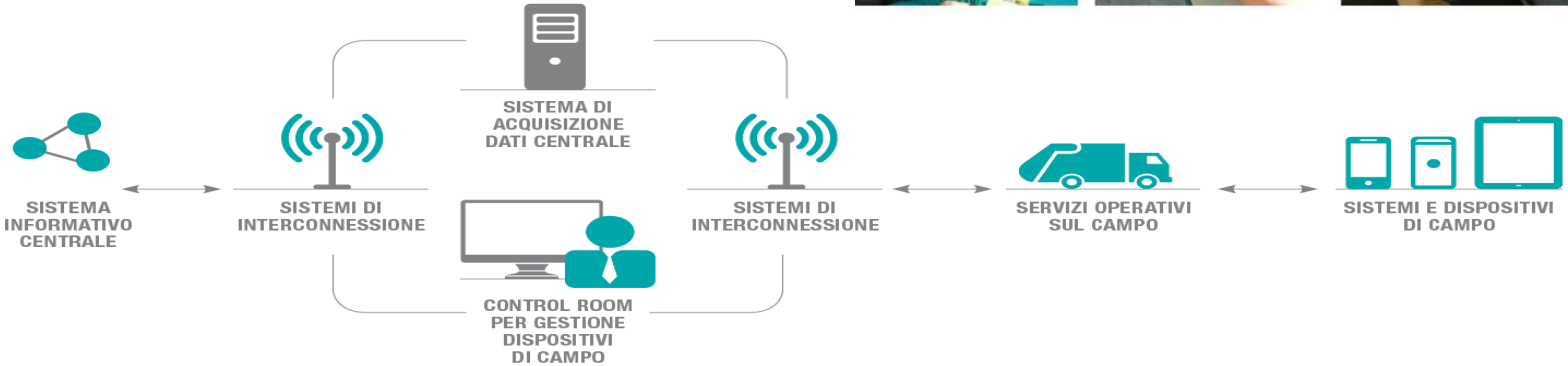


Electronic control and tracking system



“Gate” system with electronic control

Hergo project: Information Technology for waste management services

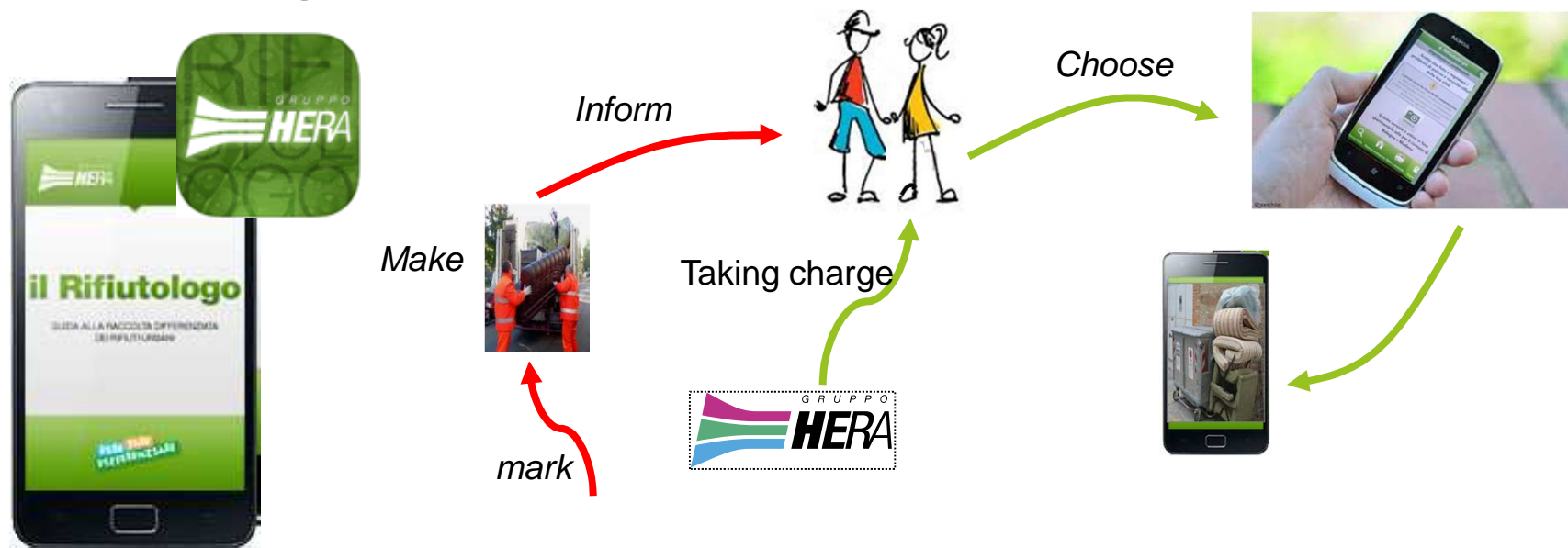


Innovative projects – HERA group

Underground collection systems



Waste APP “Il Rifiutologo”



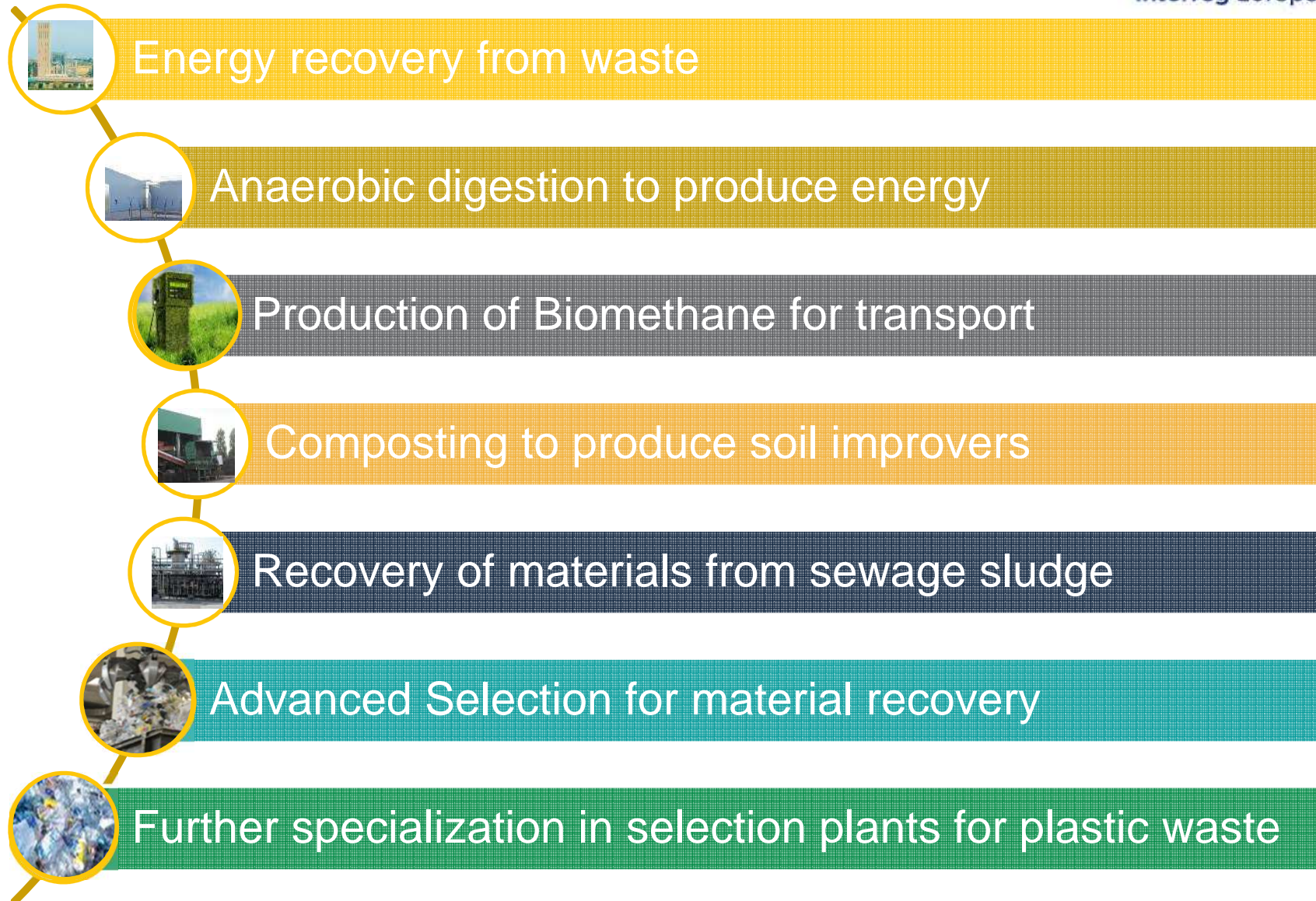
Hera Group: Circular Economy

The «Green Economy» supported by the Hera Group thanks to the development and the integrated management of the separate collection

- In 2015, **94% of the separate waste collection has been recovered**
- The **green economy chain is supported: 191 plants (171 enterprises)**, 44 of which in the territory served by HERA.
- The 167 enterprises altogether give work to **18.000 employees**, for an overall turnover of about **10 billions Euro**.

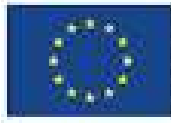


HERA Group: Circular Economy Projects





Camera di Commercio
Molise



European Union
European Regional
Development Fund



agenda

- State of waste management and recycling process in Italy
- Herambiente (Hera Group) waste management performances and valorization of end of waste
- **European scenario and Circular economy**

Circular Economy - Waste package

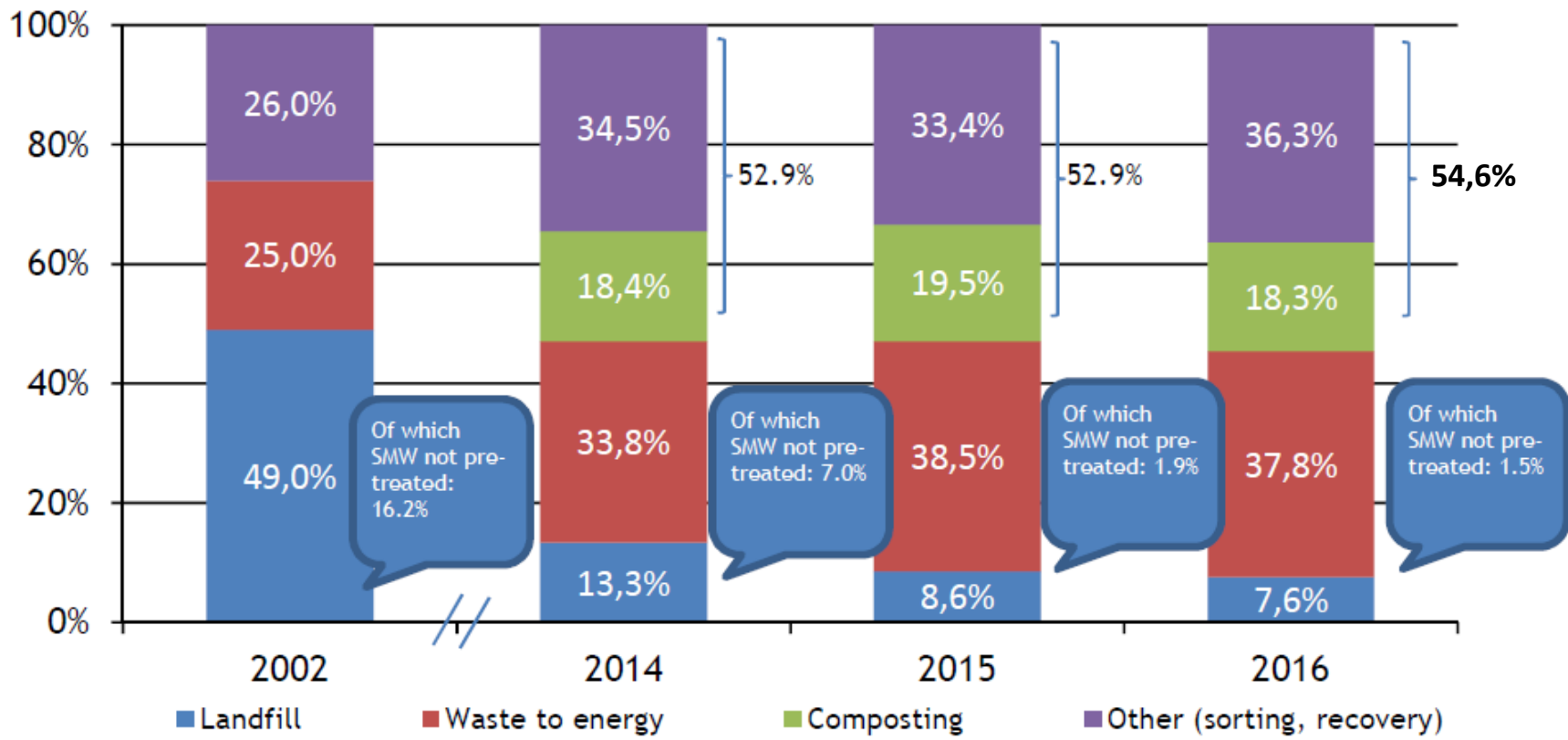
- New targets for the preparing for reuse and recycling of municipal waste:

By 2025	By 2030	By 2035
55%	60%	65%

- New landfill target: Member states will ensure that by 2035 the amount of municipal waste landfilled is reduced to 10% or less of the total amount of MW generated

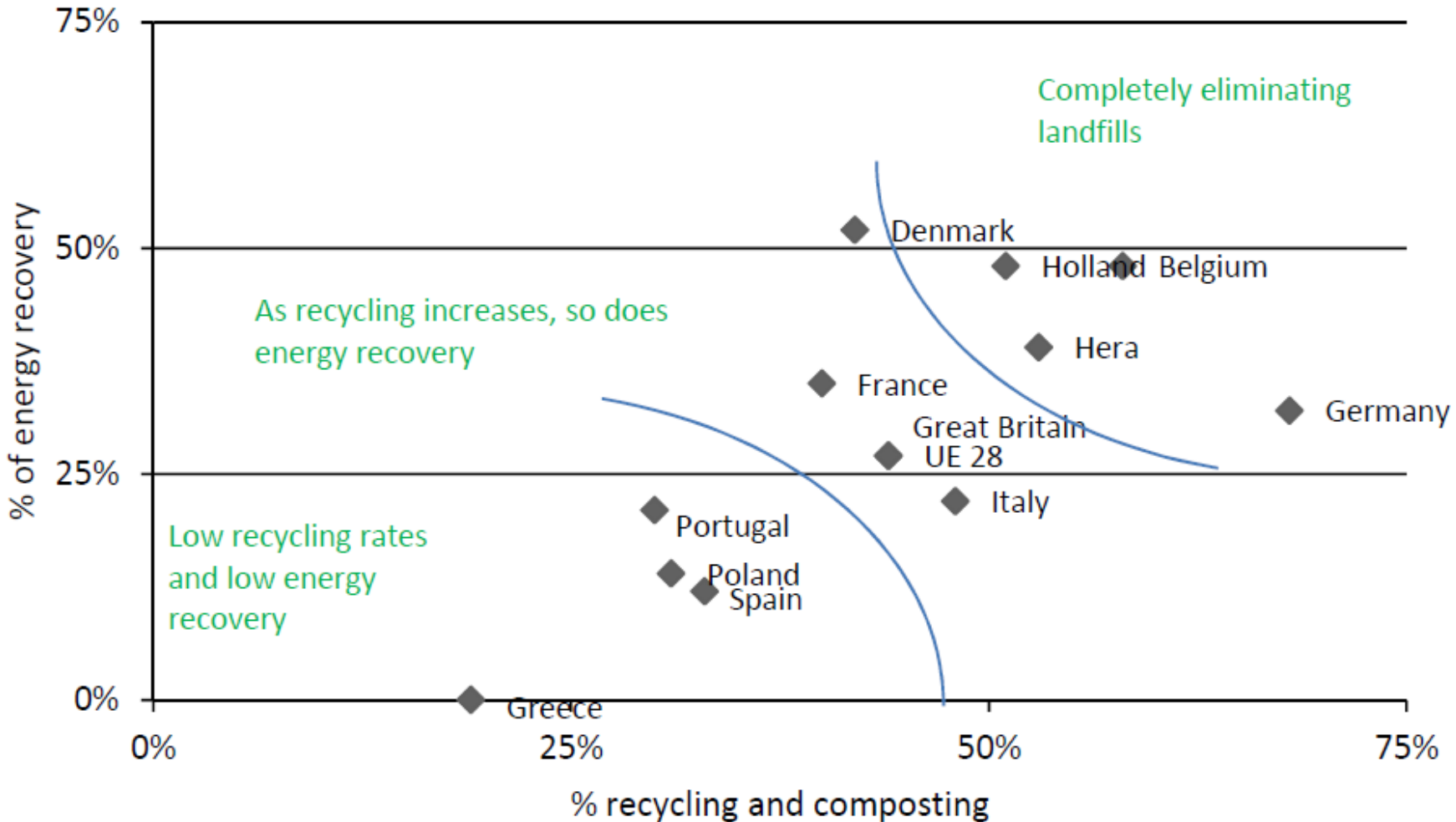
Reaching EU targets

HERA - Evolution of waste management performances




Source: Hera, Sustainability Report 2016

Reaching EU targets



Source: Hera, Sustainability Report 2016

Reaching EU targets

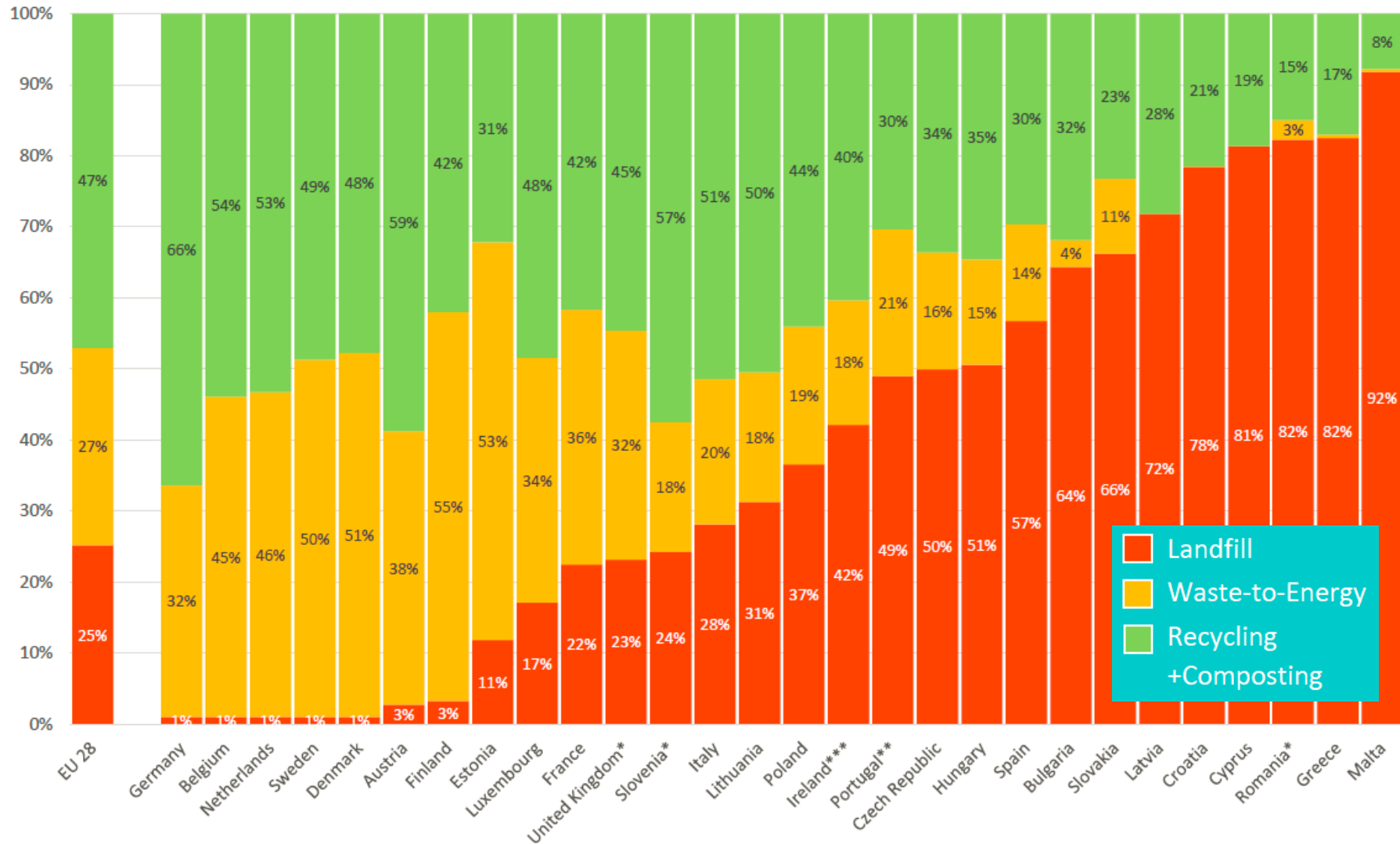


CIRCULAR ECONOMY

	<u>EU target</u>	<u>Hera</u>
Urban W. recycled	65% within 2030	✓ 10Y in advance
Urban W. in landfills	Below 10% within 2030	✓ Already today
Packaging recycling	Above 65% within 2025	✓ 5Y in advance

Source: Hera, Sustainability Report 2016

Municipal Waste treatment in EU, 2016



Source: CEWEP, on EUROSTAT data, 2018



Società del Gruppo Hera



European Union
European Regional
Development Fund

Thanks for the attention

Federico Foschini

federico.foschini@gruppohera.it

Herambiente S.p.a.

www.gruppohera.it

www.herambiente.it



Camera di Commercio
Molise

