



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



THIRD VIRTUAL MEETING
20th April 2021

Plastic Waste Management in
European Cities – Key Role of
Associations and NGOs



HISTORIC CITIES AGAINST PLASTIC WASTE (HISCAP)



This project has received funding from the
European Union's Horizon 2020 research and
innovation programme under grant agreement No.
860407



JEAN-BENOIT BEL



Jean-Benoit is an environmental engineer holding a degree in general engineering from the École Centrale de Lille (France) and a Master degree in environmental engineering from the Technical University of Denmark. He has worked for 9 years for the Paris Region Waste Observatory (ORDIF). He is now a Senior Project Manager and Senior Expert at ACR+, specialised in waste monitoring and benchmarking.



Plastic Waste Management in European Cities ACR+ - Role and perspective of local authorities



Plastic Waste Management in European Cities

ACR+ - Role and perspective of local authorities

Meet ACR+

The Association of Cities and Regions for sustainable Resource management

+100 members in 23 countries

Some of them:



REGIONE AUTONOMA DE SARDEGNA
REGIONE AUTONOMA DELLA SARDEGNA

regio arnhem
nijmegen



eastern-midlands
waste region



The Hague



EMULSA
medio ambiente · medio ambiente
gijón · xixón

REGIONE
TOSCANA



ODENSE KOMMUNE



REGION SUD
PROVENCE
ALPES
CÔTE D'AZUR

WOSTESERV
CREATING RESOURCES FROM WASTE



Région
PAYS DE LA LOIRE



lipor



EPIRUS REGION



LISBOA
CITY OF LISBON



Municipality of
Xylokastro - Evrostini
Corinthia

www.acrplus.org

provinsje fryslân
provincie fryslân

metropool
regioamsterdam



Generalitat de Catalunya
Departament de Territori
i Sostenibilitat



Agència de
Residus de
Catalunya



ZAGREB.HR
Službene stranice
Grada Zagreba



bruxelles
environnement
leefmilieu
brussel
.brussels



ANEL
Nicotia Development Agency

General challenges with plastic waste

- Increasing production and consumption
- Still low capture rates
- Availability of recycling routes (and various bans on imports)
- Major impact of mismanagement of plastic waste

For local authorities:

- Low sorting performances
- Confusions for inhabitants
- Mistrust with recycling routes for inhabitants

The waste observatory



Observatory
ACR+

- Launched in 2010 to compare local waste data and identify good practices
- Several publications:
 - [Comparison of municipal waste management in EU cities](#) (December 2017)
 - [Cross-analysis of "Pay-As-You-Throw" schemes in selected EU municipalities](#) (May 2016)
 - [Report on bio-waste selective collection schemes](#) (May 2016)
- EU project: R4R, COLLECTORS

Plastic packaging waste collection across Europe

- A **collaborative** project: dialogue between researchers and public authorities, citizens, and recycling organisations
- Documentation of 240 waste collection systems
- Environmental impact, alignment with recycling, citizens' involvement, economic balance



Main findings for plastic packaging waste

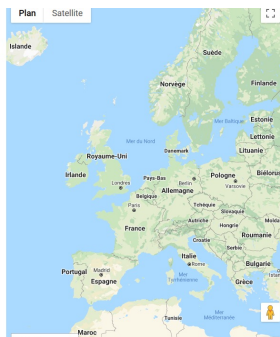
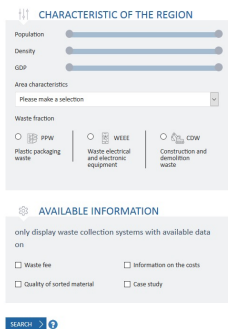
LOCAL PRACTICES

- Plastic packaging waste generation higher in highly touristic areas
- Capture rates comparatively lower than other packaging
- Importance of quality for improving the recycling rate
- Importance of well-performing mechanical sorting centres
- Comparable performance of source-separation and co-mingling
- Better performances with door-to-door systems
- Importance of incentives (PAYT, etc.)

POLICY RECOMMENDATIONS

- More harmonisation of sorting guidelines
- Extension of sorting guidelines
- More transparency over the recycling value-chain
- EPR fee modulation according to recyclability or recycling rates
- Importance of economic instruments (EPR funding, taxes on disposal, Pay-as-you-throw schemes)

Available resources



[COLLECTORS webplatform](#)



Guidelines for improving local waste collection systems
Jean-Benoit Bel, ACR+

[COLLECTORS guidelines](#)



Policy recommendations
Jean-Benoit Bel – ACR+ & Brooke Flanagan – EUROCITIES

[Policy recommendations](#)



[Data analysis of 135 waste collection systems](#)



Deposit Refund Systems



DEPOSIT-REFUND SYSTEMS IN EUROPE



FOR ONE-WAY
BEVERAGE
PACKAGING

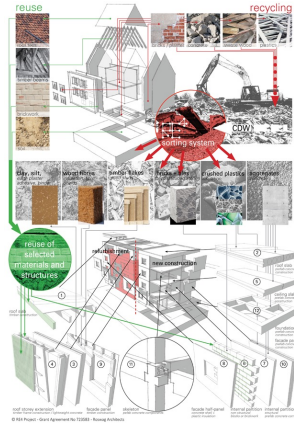
JANUARY 2019

- DRS systems commonly lead to high performances (quantity + quality)
- Requires the right information and convenience
- New implementation to come in different regions
- Variations: bring points awarding bonuses when used



Other plastic waste

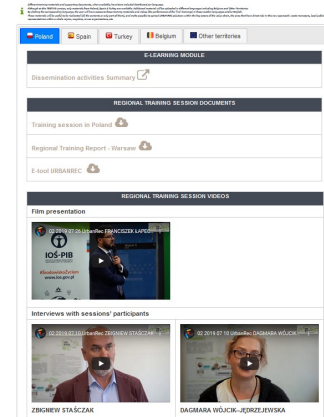
- Hard plastic might be collected in civic amenity sites
- Plastic from construction/demolition waste
- Challenges with recycling (lack of information on actual content)
- Recycling technologies: fragmentation, wood-plastic composites
- Priority on re-use of products



[RE4 project](#)



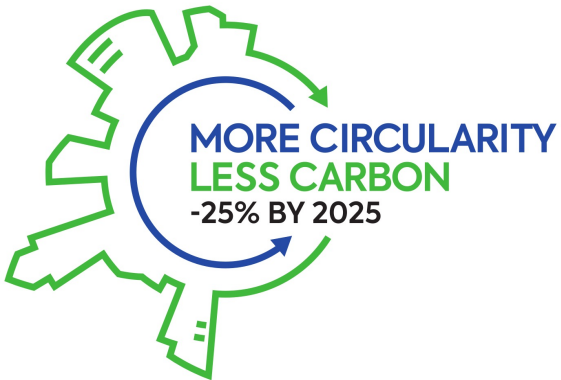
[Urbanrec Guidelines](#)



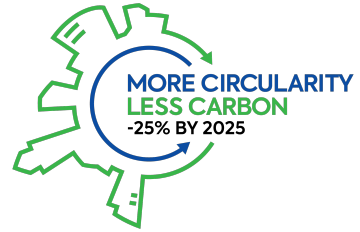
[Urbanrec e-learning module](#)

Plastic and climate change

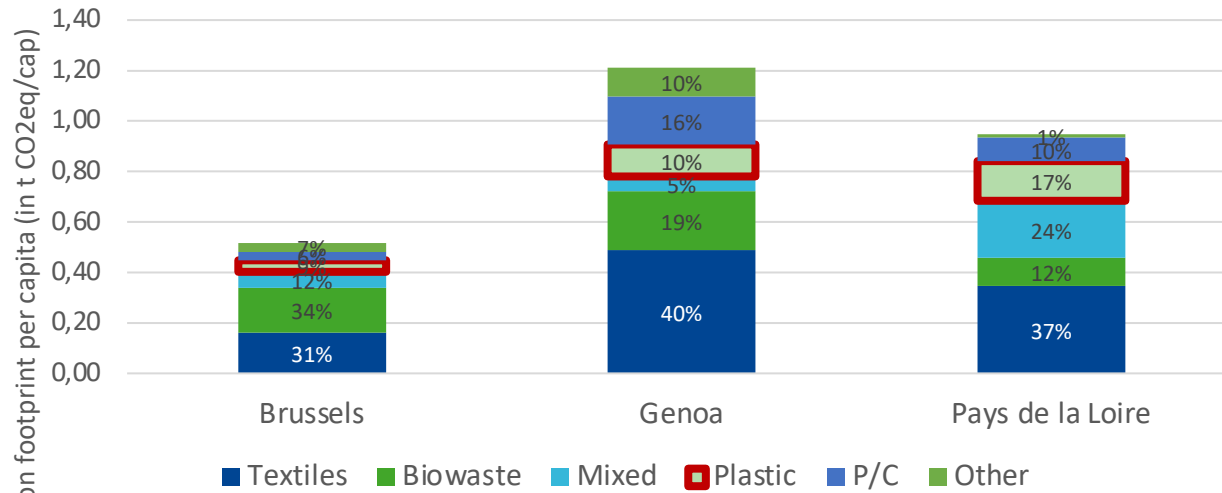
MORE CIRCULARITY LESS CARBON



Plastic and climate change

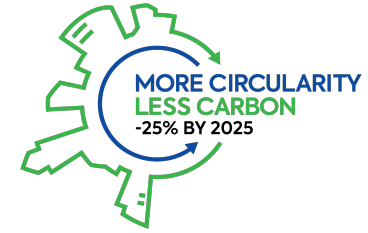
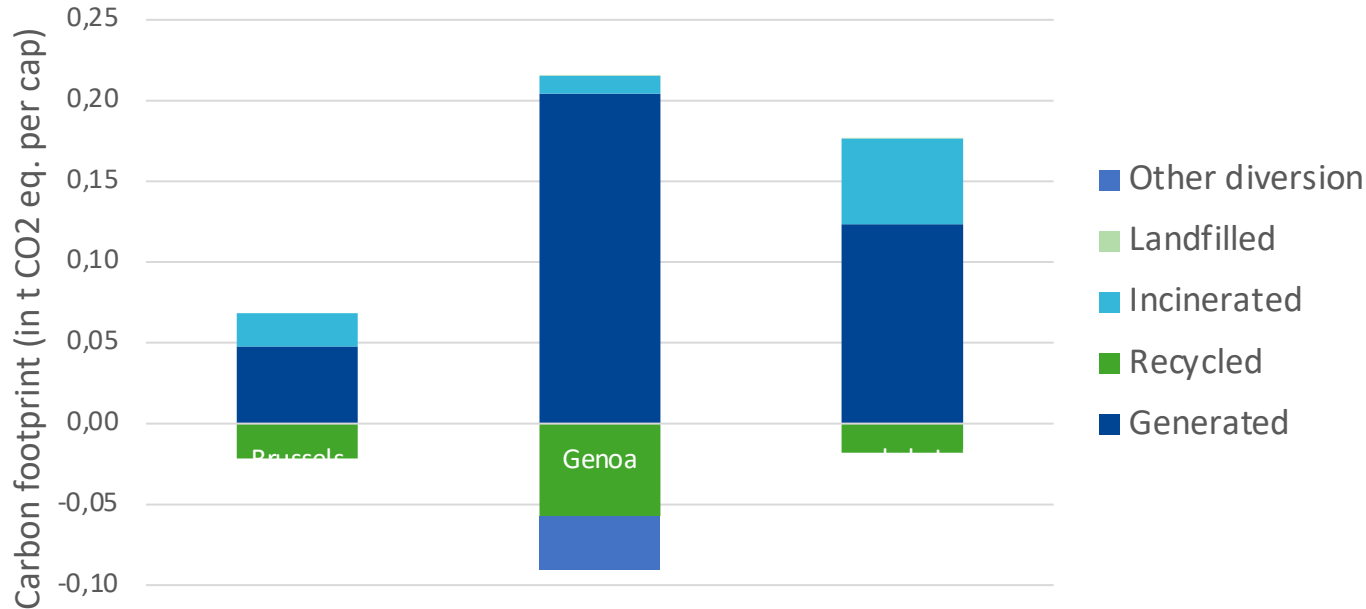


Carbon footprint per capita for the different waste fractions



Plastic and climate change

Carbon impact of plastic waste generation and treatment for plastic waste



EUROPEAN WEEK FOR WASTE REDUCTION



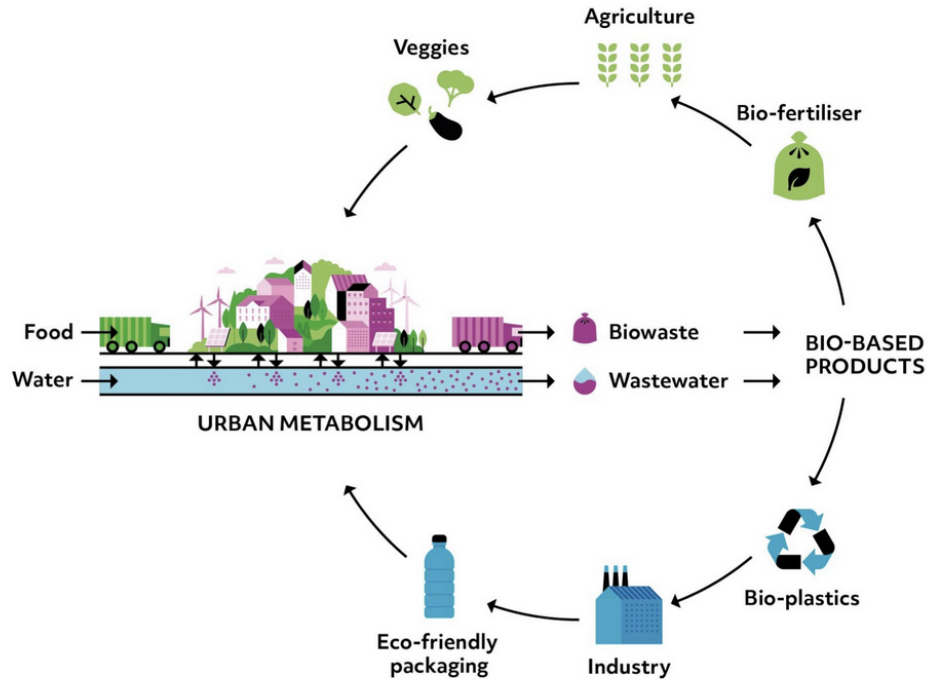
EUROPEAN WEEK
FOR WASTE
REDUCTION

- Started in 2009 
- 9 days every November
- Promotes waste hierarchy with focus on prevention
- This year from 21 to 29 November
- Over 10,600 actions in Europe and beyond run by public authorities, citizens, NGOs, businesses, schools & other bodies



Bioplastic: current challenges

- Confusion between bio-based, biodegradable, and compostable plastic;
- Issue with waste management:
 - What sorting guidelines for inhabitants ?
 - How to separate them from the other plastic ?
 - Technical possibilities for recycling ?
 - Treatment with bio-waste / impact on processes and on the quality of by-products?
- Need to design a « circular system » for bioplastic
- Upcoming publication on bio-economy by ACR+



Implementation

48

Months

9

Work
Packages

10

Countries

23

Partners



**Join the HOOP network
of cities and regions!**



What is the HOOP project?

The HOOP project supports 8 lighthouse cities and regions in developing large-scale urban circular bioeconomy initiatives that will focus on making bio-based products from urban biowaste and wastewater.

HOOP provides Project Development Assistance (PDA) to



Albano-Laziale
(Italy)



Bergen
(Norway)



Münster
(Germany)



Greater Porto
(Portugal)



Almere
(The Netherlands)



Kuopio
(Finland)



Murcia
(Spain)



Western Macedonia
(Greece)

How to join the network?

1

Sign up through
[HOOP website](#)

2

Wait for the approval by
the network manager

3

Welcome
in HOOP!

More questions?

Check out www.hoopproject.eu/network
or contact Network Manager, Jean-Benoît Bel,
ACR+ (network@hoopproject.eu)



Thank you !



Jean-Benoit Bel

jbb@acrplus.org

www.acrplus.org

JACK MCQUIBBAN



Jack is a young professional leader working in the field of environmental campaigning and movement building. Jack is currently the Zero Waste Cities Programme Coordinator at Zero Waste Europe (ZWE), responsible for supporting local municipalities across Europe, via the network of ZWE's members, to design and implement effective zero waste strategies in their community. Currently, the programme works with nearly 400 municipalities who have committed to go zero waste, and Jack has been behind the creation of Europe's first ever Zero Waste Cities Certification.



Zero Waste Cities

Local systems designed to prevent plastic waste



#ZeroWasteCities

Zero Waste Cities

Local systems designed to prevent
plastic waste

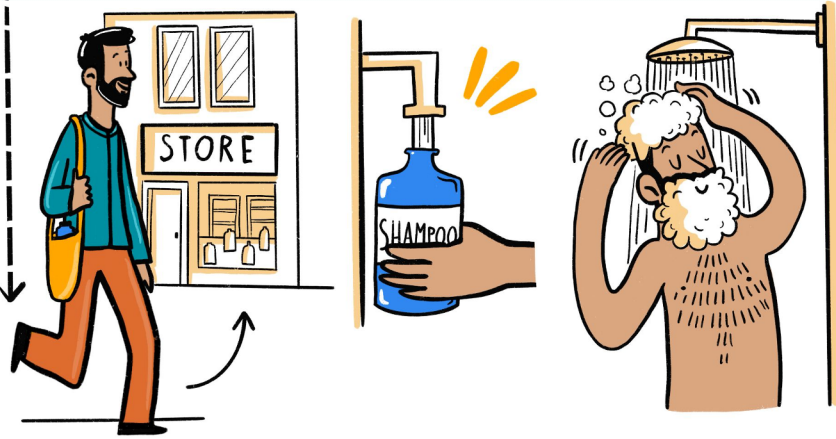
Jack McQuibban
jack@zerowasteurope.eu

zerowasteurope.eu

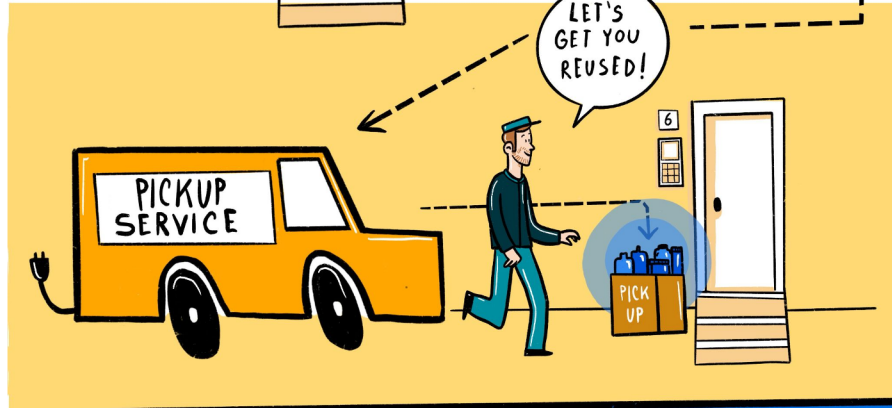


**What if our biggest
challenge is a failure in
imagination?**





IN STORE REFILL



DELIVERY AND PICKUP SYSTEM



What is a Zero Waste City?

Our approach:

- A continuous effort to phase out waste
- not by burning or landfilling it – but instead by creating and implementing systems that do not generate waste in the first place.

Basic framework of a zero waste city (1)

- Kerbside collection of separate waste streams (ZW cities in Italy regularly achieve above 80% sep collection rates)
- **Most important - begin and prioritise organic waste!**
- Residual waste assessment to analyse the most problematic items/packaging
 - Ability to redesign collection rounds for cost & impact optimisation
 - Data to feedback to producers to address non-recyclable materials
- Implementation of a Pay-As-You-Throw system to incentive waste reduction further
 - Continuous seeking of improvements. Can be high or low-tech, several options available

Basic framework of a zero waste city (2)

- Open and engaging partnership with the local community
 - Advisory boards, zero waste family challenges, zero waste label for businesses/schools
- Waste prevention measures adopted by the municipality where possible, encouraged where they have no power
 - **Packaging free shops; Nappy laundry & cleaning; Reuse & Repair centres; supporting businesses implement Deposit Return Schemes**
- Looking inwards to identify further waste reduction measures & incentives
 - Public events & spaces, public procurement

The Zero Waste Cities Programme



Who said Zero Waste cannot work in tourist destinations? In 2000, Sardinia was Italy's worst performing region in waste management with a separate collection rate of 3.8%. Since then the situation radically changed, thanks to the decision of setting up a Regional Programme for organic waste within its Waste Management Plan in 2004.





Dealing with plastic waste today

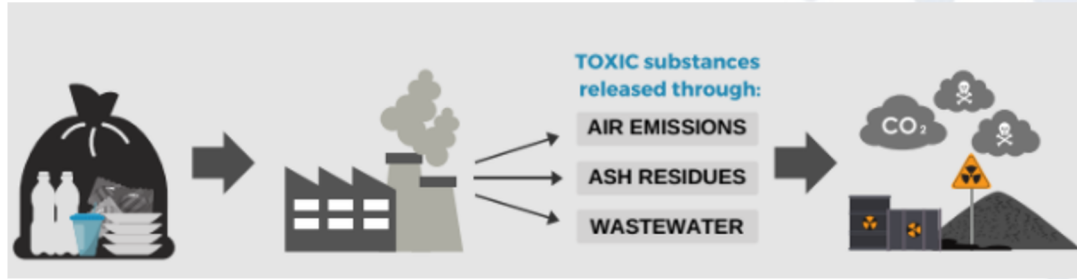
1. Prevention as the priority

- **Eliminate the use of single-use plastic in public buildings, in public cafeterias/canteens and at events organized by local governments.** Instead, make reusable alternatives mandatory.
- **Establish ambitious public procurement guidelines** that enforce the prioritisation of reusable products and services across all of the municipality's jurisdiction
- Demand regional/national governments to **establish deposit-return systems (DRS)** throughout the region.
- **Support and encourage the implementation of public policies such as Extended Producer Responsibility (EPR)** to reduce the amount of plastic and other single-use materials put in circulation, while working to improve the reparability and reuse of consumption goods.
- **Provide financial incentives and technical guidance** to facilitate the growth of shops that offer products and goods in bulk.

2. Engage and support the community

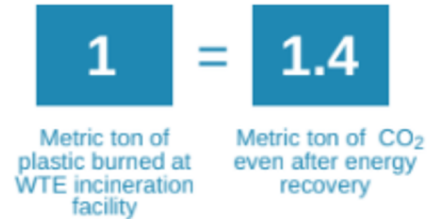
- **Establish a door-to-door waste collection system** for households & businesses that allows separation of key material streams, including plastic packaging.
- **Identify and support key recycling businesses** and markets for your collected, and now higher quality, plastic materials.
- **Make public a single-use plastic reduction plan** and share this transparently with the local community
- **Ensure separate bins are available in key touristic street areas too**, as well as other prevention measures (tap water fountains)
- **Promote measures to educate and raise awareness** (*e.g. zero waste challenges, plastic free months*) on this problem and the need to reduce single-use plastic, both for citizens and local companies.

3. Do not view incineration as a sustainable treatment method



Plastic is also a climate polluter

Incineration is the worst disposal method for plastic: burning one metric ton of plastic in an incinerator results in 1.4 metric ton of CO₂ equivalents, even when accounting for energy recovery from the process.



THE PROBLEMS OF "PLASTIC-TO-FUEL"



Produces dirty fossil fuel



Toxic emissions, ash, char, slag and wastewater



Energy-intensive to operate and maintain



Cost-prohibitive, high-profile failures



Justifies overproduction of plastic



Local guidance on implementing the Single-Use Plastics Directive

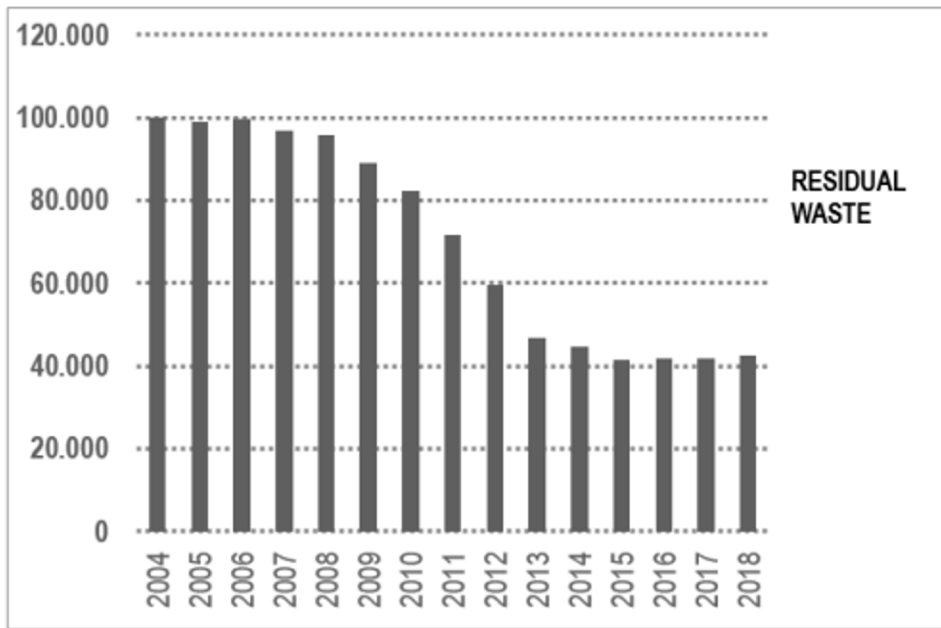




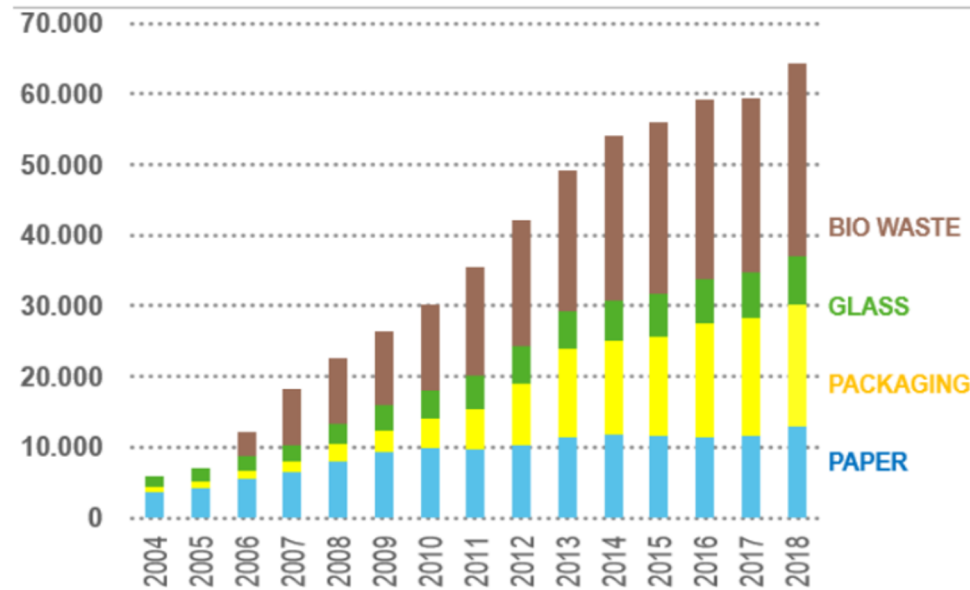
Successful examples from Europe

Ljubljana (Slovenia) - First European ZW Capital

Quantity of Residual Waste (in tonnes)



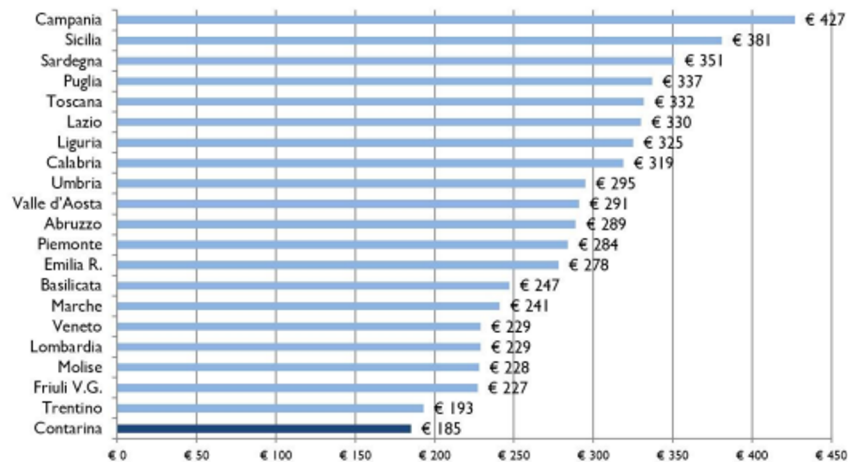
Quantity of separately collected waste (in tonnes)



Region of Treviso, Italy

The average household's fee*

Comparison of national data (2016)

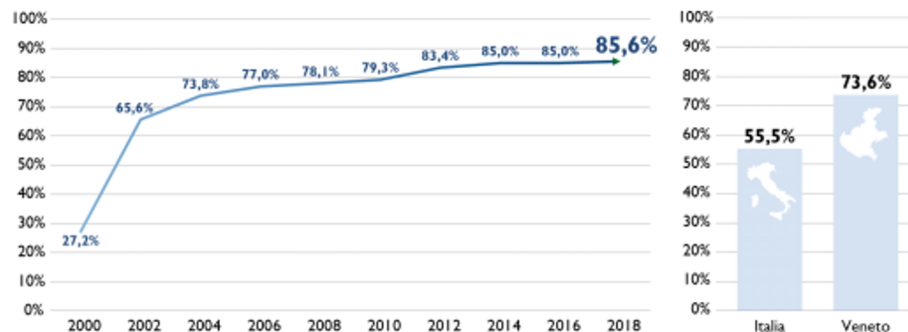


*Average household composition: 3 person

SOURCE

Dati Contarina 2017 Cittadinanzattiva - Osservatorio prezzi e tariffe 2016 (Importi comprensivi di IVA e tributo provinciale)

Recycling Rate of the municipalities managed by Contarina



SOURCE

Contarina 2018

Rapporto Rifiuti ISPRA 2018 (dati 2017)

Italy (2018)

Separate collection:

- 48 Provinces above 65% (out of 107)
- (top 4 above 80%, Treviso, pop. 1M, 88%)
- 3 Regions (out of 20) above 70%, 10 above 60%
- (Veneto, pop. 5M, 74%; Lombardy, pop. 10M, 71%)
- 3298 Municipalities above 70% (out of roughly 8000)
- 1168 above 80%
- 122 above 90%

New metrics of sustainability! Minimised residuals, kg/person

- 2406 Municipalities below 100 kg
- 1029 below 70 kg
- 353 below 50 kg
- 39 below 30 kg



**What if our biggest
challenge is a failure in
imagination?**



#ZeroWasteCities

Thank you!

Jack McQuibban
jack@zerowasteurope.eu

zerowasteurope.eu

Historic Cities against Plastic Waste

Panel Discussion

Join the network on our website

<https://www.bioplasticseurope.eu/networks>

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 860407



Historic Cities against Plastic Waste

THANK YOU FOR JOINING THE EVENT!

Join the network on our website

<https://www.bioplasticseurope.eu/networks>

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 860407

