Translating zero waste strategies into climate benefits

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We **(ZWE)** are the **European network of communities, experts, organisations, and change makers;** working to **eliminate waste** in our society

Support NGOs, local groups and communities

Change European Policies

Mentor cities towards zero waste

2024: €2.5 M

23 staff in Brussels

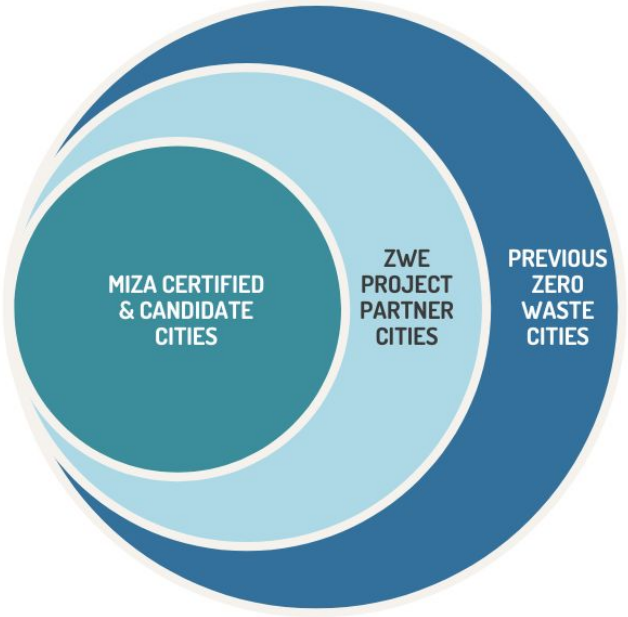
37 groups in 29 countries

European chapter of gaia

RSVP
ReuSe Vanguard Project

Turning pioneer municipalities into a European best-in-class standard

ZERO WASTE CITIES CERTIFICATION
Certified City



ERIC

50+ municipalities implementing **holistic ZW strategies via the Mission Zero Academy (MIZA) Certification.**

48 municipalities being **directly supported by** ZWE in projects.

18 million people covered in these two categories.

400+ municipalities who made commitment from the **previous ZW Cities programme pre-2021**

Zero Waste Hierarchy

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What is the true climate cost of waste management?

What savings are achievable via zero waste strategies which prioritise prevention and reuse?

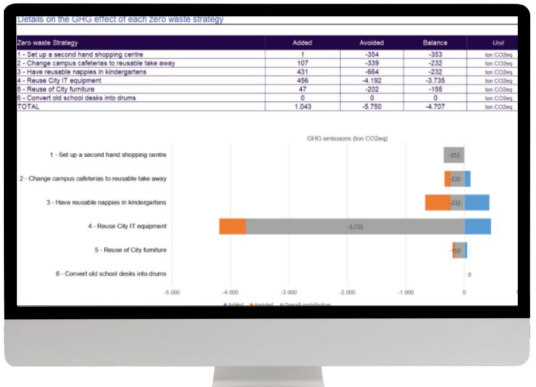
The Carbon Calculator

Measure the climate impact of your waste management policies

- **Measures the GhG emissions** to current and planned waste-related activities across the whole waste management chain, including:
  - *Waste prevention*
  - *Reuse and preparation for reuse*
  - *Recycling*
  - *Disposal*

- **Avoided and added emissions accounting**
  - *Calculates emissions avoided through reduced waste generation*
  - *Assesses added emissions from new processes introduced during the transition*
  - *Provides a comprehensive view of the climate impact of a city's zero waste strategy*

- **Incorporates data on various waste streams, including**
  - *Bio-waste,*
  - *Paper and cardboard,*
  - *Glass,*
  - *Plastics,*
  - *Residual waste*

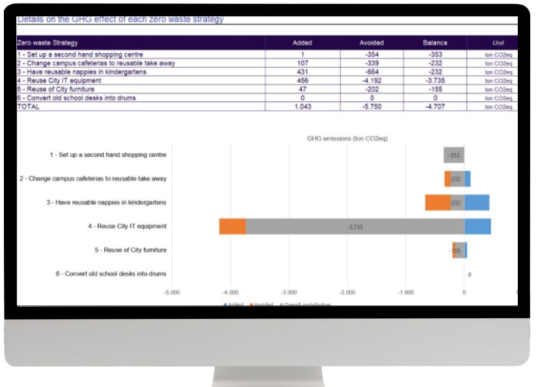


The Carbon Calculator

Measure the climate impact of your waste management policies

- **How does it work?**
  - **Baseline emission scenario:** city specific data on waste generation, composition, current management practices
  - **Model zero waste scenarios:**
    - Input potential changes in waste prevention, reuse initiatives, and improved recycling rates to see the resulting emissions reductions
    - Experiment with different strategies and quantify their potential impact before implementation

Seemingly small changes in waste management can lead to significant reductions in a city's overall carbon footprint.



Applying the tool to Barcelona

2021 data:

- **1.23 kg** of waste generated per person per day
- Separate collection rate at **41.65%**
- Residual waste is primarily sent to mechanical-biological treatment plants

Baseline emissions:

- Barcelona's waste management activities amount to approximately **172.770 tonnes of CO2 equivalent per year** = annual emissions of 30,000 Europeans
- **Organic waste and residual waste are the largest contributors**, accounting for 40% and 35% of total emissions respectively.
- **Recycling activities,** particularly for paper and cardboard, **contribute to avoided emissions,** but the current recycling rates are not sufficient to offset the emissions from other waste streams.

So... what is needed to cut down carbon emissions?

The Carbon Calculator

Measure the climate impact of your waste management policies

7 concrete actions were modeled, aligned with the principles of the waste hierarchy and the city's climate goals, includes the following key components:

1. **Waste prevention**
   a. *Implement a city-wide food waste reduction campaign.*
   b. *Introduce a ban on single-use plastics.*
   c. *Promote reusable packaging systems in retail and hospitality sectors.*

2. **Reuse and repair:**
   a. *Establish a network of repair cafes and second-hand shops.*
   b. *Create a municipal reuse centre for furniture and household items.*
   c. *Develop a digital platform for sharing and exchanging goods*

3. **Enhanced separate collection:**
4. **Improved bio-waste separate collection and recycling**
5. **Optimised recycling**
6. **Residual waste reduction (phasing out incineration and landfilling)**
7. **Education and community engagement**

The Carbon Calculator

Measure the climate impact of your waste management policies

Results and potential impact

- **Annual emissions could go down more than 187,000 of CO2 equivalent per year**
  - The city would **no longer be a net emitter !**
    - 14,641 tonnes of CO2 equivalent additional savings per year compared to the baseline
  - Reduction achieved through a combination of decreased total waste generation, increased recycling rates, and more efficient treatment of organic and residual waste
  - **Long-term cumulative impact**
    - Over a 10-year period, the implementation of this zero waste strategy could **prevent the emission of up to 2 million tonnes** of CO2 equivalent

🏆 The most impactful activity in terms of emissions reduction is waste prevention.

- Measures to reduce overall waste generation, particularly in food and plastic waste, Barcelona could avoid approximately **80,000 tonnes CO2e annually**.
  - Accounting for about **42% of the total potential savings**

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The role of Cities

Ultimately, it is the role of cities to set the culture & direction of travel for others to follow

Elevating reuse in cities (ERIC)

- Implementation of local **Prevention Plans focused on single-use items,** in 30 municipalities across **10 different EU countries.**
  - Promote **concrete upstream local policies** that can be taken locally to **prevent single-use waste** and **promote reuse systems**.
  - **Assess and showcase the impact of those policies** to **accelerate replication**

- **Build a European network of plastic prevention and reuse experts.**

Set the vision & strategy within a local prevention plan

What practical policies can be implemented to reduce local dependency on single-use items?

- **Embedding zero single-use criteria in public procurement**
  - **Banning single-use in public buildings and spaces via public procurement** with clear rules to phase out these items from municipal workplaces, internal events and public buildings
- **Promote reusable nappy programmes**
- **Promoting zero-packaging consumption through local incentives**
  - E.g “Fes un pas, porta l’envàs” campaign in Viladecans (“Take a step, bring your container”), offering discounts and vouchers to citizens for bulk purchases at local shops.
- **Mandating reusable packaging at all municipal events**
- **Piloting reuse systems in the food and beverage sector.**
- **Installing refill stations to reduce bottled water waste + promote tap water use**
- **Creating smoke-free zones and collecting cigarette butts.**

But.. we need to **create the right economic conditions to level the playing field for reuse and prevention** (e.g Tubingen style local- tax on single-use packaging)

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Making the case for reusable nappies in Brussels

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Washable nappies – A smart investment for Health, Budget & Climate

Why this matters?

- 1.5 million disposable nappies used in municipal creche every year in Bxl = 242 tonnes of waste sent to the incinerator

- CO2 emissions per nappy used:
  - One disposable nappy = 0.384 kg CO2
  - One washable nappy = 0.151 kg CO2

- If washable nappies were used in the 40 communal crèches by the end of 2026 .....
  - 4,000 washable nappies will be in circulation to cover 1,500,000 nappies a year, each of which can be washed and reused up to 300 to 500 times
  - 6 and 9 million disposable nappies will not be thrown away = **1,400 tonnes of CO_2 equivalent saved over a period of 4–6 years.**

Spotlight on: mixed waste sorting

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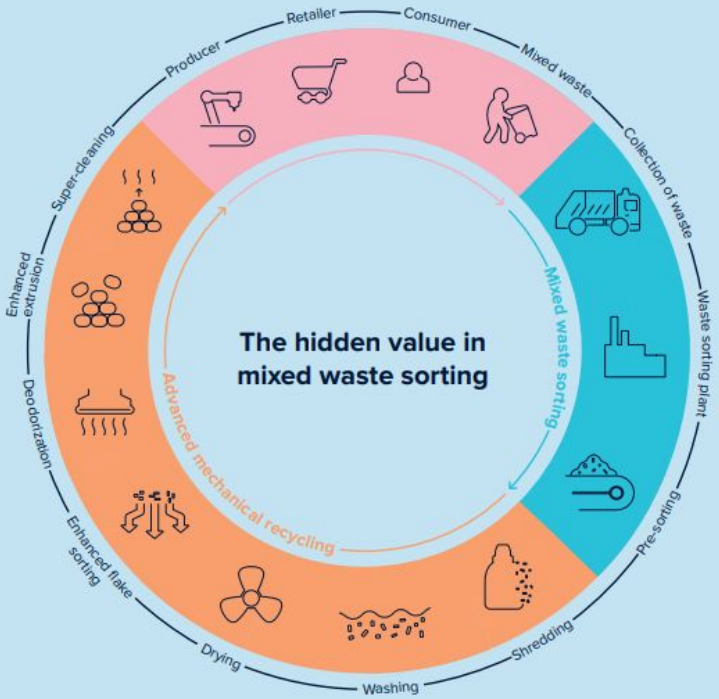


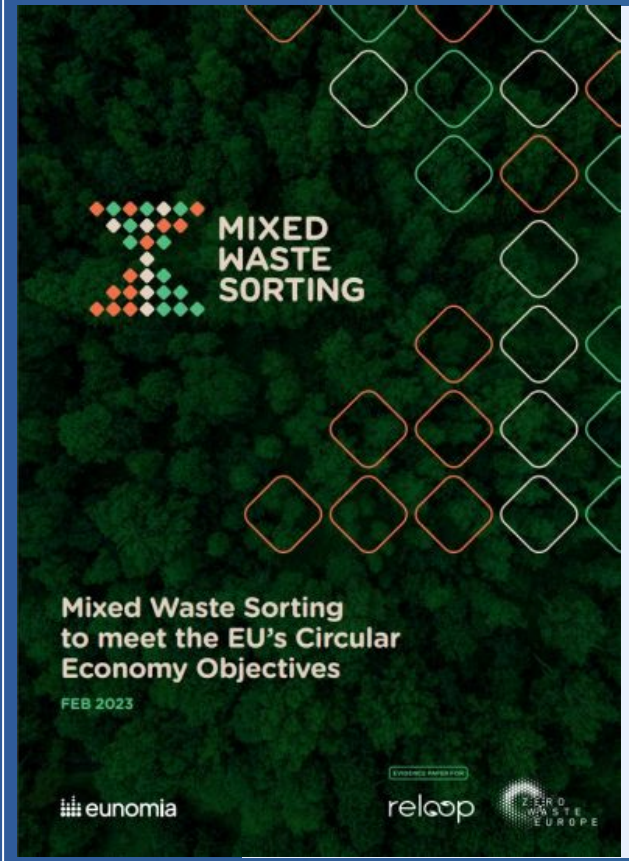
The icing on the cake

Incineration alone no longer compatible with our net-zero goals

- Increasing % of plastics in residual waste bin result in higher calorific content and GhG emissions of burning waste

Mixed waste sorting is adding additional capturing technologies of what hasn't been separated for recycling before incineration

This can have huge benefits on increasing recycling rates and therefore reducing GhG emissions



Mixed waste sorting as the final addition for a well-designed system

Targets rigid plastics, metals and drinking containers mostly

Can produce virgin-like quality material through more effective cleaning & drying

Example from NL saw 12 times the amount of plastic for recycling captured

When combined with key measures such as an effective separate collection system, Pay-As-You-Throw, deposit return schemes - municipalities can achieve separate collection rated of 90% and above

The icing on the cake!

Monetising the carbon savings of ZW strategies

Assigning a monetary value to carbon emissions reduced or avoided through zero waste strategies helping cities translate climate impact into financial terms.

What we need? Turning emission reduction into investment potential!

- Develop emissions accounting methods that capture the climate benefits of prevention/reuse and translate them in financial terms via a carbon price tag

- Connect it with climate funding instruments (e.g green bonds, carbon credit markets, National climate funds…)

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Thank You

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Tübingen's tax on single-use

Estimated generated annual revenue for the city of 900k in first full year (100k investment)

Subsidy programme for businesses transitioning to reusable packaging

- 500 € for packaging (per shop)
- 1000 € for dishwashers (per shop)

How does it work?

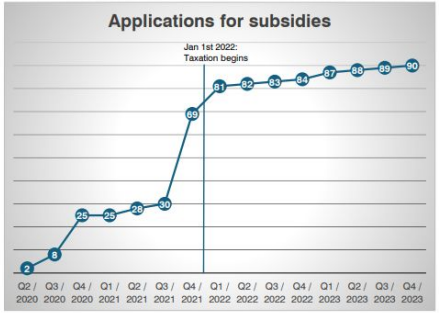
- 0,50 € on every single-use food package
- 0,50 € on every single-use drink package
- 0,20 € on single-use cutlery

No tax if:

- Reusable packing is used (e.g. as part of a deposit system)
- Food/drink are not consumed promptly (due to legal reasons)

We support alternatives!

- Tax is a catalyst for the usage of reusable packages
- 53.000 € in subsidies have been disbursed to local businesses so far
- 170 businesses offering reusable packagings



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