

Understanding the costs:

A brief overview of the economic costs related to waste infrastructure across Europe



zerowastecities.eu

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Introduction

For municipalities in Europe today, the argument in favour of implementing zero waste solutions is clear from an environmental perspective. From emitting less Greenhouse Gas (GhG) emissions and toxic pollutants to reducing the need for extracting and manufacturing new products from natural resources, the environmental benefits of becoming zero waste are evident. Therefore, there is a widespread (mostly) consensus and understanding that zero waste is needed to fix the environmental crises we face.

Yet from an economic perspective, the picture becomes less clear for municipalities. Initial investment is required to adapt a waste management system so that it becomes one that is built to generate far less waste and protect the value of resources. Evidence from our Zero Waste Cities showcases that when implemented well, a zero waste system is much more efficient (with less waste being reduced) and therefore saves cities substantial amounts of money in the long-term.

However the timeline for costs to even out or for municipalities to begin saving money depends on several different factors, many of which are local and cannot be modelled across different countries. This lack of understanding about what it will require, financially, for a city to begin its transition towards zero waste is one of the biggest barriers we face in our day to day work. The upfront costs of different infrastructure and their ongoing maintenance remains unclear.

This report has been designed to be an introduction for anyone wishing to better understand the kind of costs and finance required to build & operationalise some key infrastructure that are the foundations of a local zero waste strategy. It has been prepared with the intention of providing an overview from different European contexts, so that readers can see a range of examples of the costs associated with systems

to improve waste management at the local level. With this variety of data across a representative sample of European contexts, we envisage the report therefore to be useful for city officials and waste professionals across the continent.

With this data and information, we hope that local decision makers will be better informed to create the economic case and a business model for new policies that will enhance the transition to zero waste.

The report by no means provides an exhaustive coverage of all the costs associated with proper waste management for every single European country. It has instead been designed to give an introductory overview of some key data and numbers. A comprehensive report into full cost data would require both far greater research and most likely a country-specific approach. Instead, our approach has been to give an accessible introduction to this topic, highlighting different examples from a relevant sample of European contexts, rather than a full, scientific-like study.

When applying this data to your own context, it is vital to remember that in every local context, there will be certain factors and needs that will require a tailored approach when looking at the precise cost approximation of infrastructure and operations. Yet with the averages and data provided in this report, decision-makers will have a solid foundation from which to begin modelling potential costs for the development of their own zero waste cities system.



Palettes of cardboard ©Alfonso Navarro

Methodology

When designing this report, we wanted to showcase a variety of case studies that covered a representative sample of the economic and geographical spectrum across Europe. We did not want to create a long but comprehensive overview of each country. Instead, something smaller, more accessible but yet still an accurate representation of the diverse contexts European municipalities are working within today.



Fig. 1 Map of Europe indicating countries included in the cost study

To achieve this, firstly we wanted data from countries that could be broadly classified into 3 different economic groups - high, medium and low - looking at EU countries through the lens of the **volume index of GDP per capita in Purchasing Power Standards (PPS)**. Capital and especially operational costs will differ greatly between the range of economies found within Europe today. Therefore in order to present a representative sample of data, we have highlighted examples from a range of countries across the PPS index.

To balance this, we wanted not only an economically representative sample of data but also geographically too. Therefore a key part of our considerations was to ensure we had data from countries across all four corners of Europe, as much as possible.

Given all this, we decided to collect data from **10 municipalities and regions** in the following countries: **Austria, Czech Republic, Italy, Lithuania and Spain** (fig.1). We acknowledge the limitations of this methodology, but we believe that these countries provide a useful, representative sample of the lived realities of European municipalities. With this methodology, we believe most municipalities will be able to find data that is relevant and applicable for their local context.

To prepare this report, we have worked with a number of local partners in each country to help us collect the data. We did this given the greater expertise and relationships each partner had in their respective countries, rather than one organisation working across several countries and languages. Each partner was provided with the same template for data collection that was used across the 5 countries. The template was an open invitation for municipalities & waste companies to share information on the costs of several key pieces of infrastructure and their operations.

These include:

-  **Door-to-door separate collection systems**
-  **Recycling centres**
-  **Organic waste treatment methods (Composting, anaerobic digestion & biogas)**
-  **Reuse & repair centres**
-  **Extra costs incurred by adopting a Pay-As-You-Throw (PAYT) system**



Case Study-Milano Servizi

In one case, we have included data on closed landfills that create biogas, as an additional solution for waste which has not been separated for recycling.

We identified these 5 categories as core operations that form the foundations of a zero waste city, which most municipalities and their waste companies should have data on. In each case, some of the data requested was not applicable (e.g. a PAYT system not yet installed or biogas plants used to treat organic waste). It is important to note that we collected data from municipalities inside and outside of our Zero Waste Cities programme, as we wanted to showcase the applicability and relevance of the data for all municipalities, regardless of their current performance or starting point regarding waste management.

The data we collected is disaggregated into both capital expenditure (CAPEX) and operational expenditure (OPEX). CAPEX costs include the money required for building, maintaining and improving physical facilities and entities. These include things such as the bins and vans for the collection system, composting plants, equipment at recycling centres etc... OPEX costs include the costs that municipalities and companies incur related to the day-to-day operations. These include costs such as employee wages of waste workers, renting of spaces/land and the fuel needed for waste collection vans.



Vienna

Austria



1,931,593

Population



€290m

Total budget for waste management operations



High

Income Level
(in comparison to EU average)



476 Kgs

Total MSW generated per capita



834 Kgs

National average total MSW generated per capita



262 Kgs

Residual waste generated per capita



36%

Separate collection of municipal solid waste



No

Part of ZWE's Zero Waste City network?



Yes

EPR scheme in place for any MSW materials?

- ✓ Paper
- ✓ E-waste
- ✓ Batteries

Příbor

Czech Republic



8,344

Population



€3.67m

Total budget for waste management operations



Medium

Income Level
(in comparison to EU average)



275 Kgs

Total MSW generated per capita



570 Kgs

National average total MSW generated per capita



129 Kgs

Residual waste generated per capita



62%

Separate collection of municipal solid waste



No

Part of ZWE's Zero Waste City network?



Yes

EPR scheme in place for any MSW materials?

- ✓ Paper
- ✓ E-waste
- ✓ Batteries
- ✓ Plastic
- ✓ Glass
- ✓ Metals

Hradec Králové

Czech Republic



90,596

Population



€4m

Total budget for waste management operations



Medium

Income Level
(in comparison to EU average)



362 Kgs

Total MSW generated per capita



570 Kgs

National average total MSW generated per capita



184 Kgs

Residual waste generated per capita



49%

Separate collection of municipal solid waste



No

Part of ZWE's Zero Waste City network?



Yes

EPR scheme in place for any MSW materials?

- ✓ Paper
- ✓ E-waste
- ✓ Batteries
- ✓ Plastic
- ✓ Glass
- ✓ Metals

Jesenik

Czech Republic



10,665

Population



€693,683

Total budget for waste management operations



Medium

Income Level
(in comparison to EU average)



488 Kgs

Total MSW generated per capita



570 Kgs

National average total MSW generated per capita



134 Kgs

Residual waste generated per capita



72%

Separate collection of municipal solid waste



No

Part of ZWE's Zero Waste City network?



Yes

EPR scheme in place for any MSW materials?

- ✓ Paper
- ✓ E-waste
- ✓ Batteries
- ✓ Plastic
- ✓ Glass
- ✓ Metals

Jičín

Czech Republic



16,000

Population



€796,895

Total budget for waste management operations



Medium

Income Level
(in comparison to EU average)



356 Kgs

Total MSW generated per capita



570 Kgs

National average total MSW generated per capita



190 Kgs

Residual waste generated per capita



21%

Separate collection of municipal solid waste



No

Part of ZWE's Zero Waste City network?



Yes

EPR scheme in place for any MSW materials?

- ✓ Paper
- ✓ E-waste
- ✓ Batteries
- ✓ Plastic
- ✓ Glass
- ✓ Metals

Parma

Italy



196,764

Population



€39.37m

Total budget for waste management operations



Medium

Income Level (in comparison to EU average)



569 Kgs

Total MSW generated per capita



487 Kgs

National average total MSW generated per capita



106 Kgs

Residual waste generated per capita



81%

Separate collection of municipal solid waste

ZWC

Yes

Part of ZWE's Zero Waste City network?

EPR

No

EPR scheme in place for any MSW materials?

Livorno

Italy



159,000

Population



€32m

Total budget for waste management operations



Medium

Income Level (in comparison to EU average)



530 Kgs

Total MSW generated per capita



487 Kgs

National average total MSW generated per capita



201 Kgs

Residual waste generated per capita



62%

Separate collection of municipal solid waste

ZWC

No

Part of ZWE's Zero Waste City network?

EPR

No

EPR scheme in place for any MSW materials?

Siauliai Region

Lithuania



267,717

Population



€10.86m

Total budget for waste management operations



Low

Income Level (in comparison to EU average)



375 Kgs

Total MSW generated per capita



480 Kgs

National average total MSW generated per capita



211 Kgs

Residual waste generated per capita



44%

Separate collection of municipal solid waste

ZWC

No

Part of ZWE's Zero Waste City network?

EPR

Yes

EPR scheme in place for any MSW materials?

✓ Paper

Bergueda County

Spain



40,046

Population



€3.83m

Total budget for waste management operations



Medium

Income Level (in comparison to EU average)



436 Kgs

Total MSW generated per capita



472 Kgs

National average total MSW generated per capita



143 Kgs

Residual waste generated per capita



67%

Separate collection of municipal solid waste

ZWC

No

Part of ZWE's Zero Waste City network?

EPR

Yes

EPR scheme in place for any MSW materials?

✓ Paper

✓ E-waste

✓ Batteries

✓ Plastic

✓ Glass

✓ Metals

Manlleu

Catalonia (Spain)



21,164

Population



€2.46m

Total budget for waste management operations



Medium

Income Level (in comparison to EU average)



378 Kgs

Total MSW generated per capita



472 Kgs

National average total MSW generated per capita



62 Kgs

Residual waste generated per capita



83%

Separate collection of municipal solid waste

ZWC

No

Part of ZWE's Zero Waste City network?

EPR

Yes

EPR scheme in place for any MSW materials?

✓ Paper

✓ E-waste

✓ Batteries

✓ Plastic

✓ Glass

✓ Metals



Door-to-door separate collection systems (1 of 2)

	Vienna Austria	Příbor Czech Republic	Hradec Králové Czech Republic	Jesenik Czech Republic	Jičín Czech Republic
System in use	Hybrid	Street Containers	Hybrid	Hybrid	Hybrid
Frequency of waste collection (Data indicates D2D household, unless otherwise indicated)	1x Week Residual 1x Week Organic 1x6 Weeks Recyclables	1x3 Weeks Residual 1x2 Weeks Organic 2x Week Recyclables 1x4 Weeks Glass	1x2 Weeks Residual 1x2 Weeks Recyclables 1x4 Weeks Paper	1x2 Weeks Organic 2x1 Week Recyclables- (Cont.)	1x Week Residual 1x2 Weeks Organic 1x2 Weeks Recyclables 2x Week Residual (cont.) 1x4 Weeks Glass (cont.)
CAPEX costs for the entire system	€28,209,633 per year (2019)	-	€4,004,904 per year	€1,021,659	-
CAPEX for the collection infrastructure (bins, bags)	-	€18,800 (includes EU subsidy)	-	€44,953 (reflects 15% EU subsidised further 85%)	€102,200 (bins & vans)
CAPEX for the transport (vans)	€9,673,111 per yr (2019) Incl. of vans & fuel	€183,900 2018	-	€422,966	€102,200 (bins & vans)
Annual OPEX for the collection handling (staff time)	€5,623,447 (2019)	€11,034		€9,362	€233,625
Annual OPEX costs for the transport (fuel)	€9,673,111 per year (2019) Incl. of vans & fuel	€42,093	-	€16,455	€165,547 sorted waste €200,478 mixed municipal above= total (people + vans)
Additional costs	€12,913,015 per year (2019)	€8,173 per year for purchase of containers	-	-	-



Door-to-door separate collection systems (2 of 2)

	Parma Italy	Livorno Italy	Siauliai Region Lithuania	Bergueda County Spain	Manlleu Catalonia (Spain)
System in use	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid
Frequency of waste collection (Data indicates D2D household unless otherwise indicated)	1-2xWeek Residual 2xWeek Organic 1xWeek Recyclables 1xWeek Paper	1xWeek Residual 2xWeek Organic 1xWeek Recyclables 1xWeek Paper 1xWeek Glass	1xWeek Recyclables 1xWeek Paper 2xWeek Glass	1-2xWeek Residual 3xWeek Organic 2xWeek Recyclables 1xWeek Paper	1xWeek Residual 3xWeek Organic 2xWeek Recyclables
CAPEX costs for the entire system	€500,000	€2,500,000	€38,973,378	€107,226	€1,638,532
CAPEX for the collection infrastructure (bins, bags)	€375,000	€530,000 per year	-	€107,226 Cost for 2022. Includes purchase of new materials	€216,286
CAPEX for the transport (vans)	€125,000	€1,900,000	-	-	€1,040,467
Annual OPEX for the collection handling (staff time)	€8,600,000	€5,000,000	-	€117,326	€936,460
Annual OPEX costs for the transport (fuel)	€1,100,000	€1,200,000	-	-	€372,726
Additional costs	€3,300,000 Referring mostly to vans provided by cooperatives	-	€3,196,340 Total all local citizens pay for waste management service	€3,053,151 Annual OPEX costs for the entire system	€50,695 Bulky waste collection with on demand D2D service



Recycling centres / Drop-off points (1 of 2)

	Vienna Austria	Příbor Czech Republic	Hradec Králové Czech Republic	Jesenik Czech Republic	Jičín Czech Republic
Number of recycling drop-off points	-	1	4	2	2
Materials that can be dropped off for recycling	-	Paper, plastic, glass, metal, textiles, oil, wood, tires, electrical waste, lamps, batteries.	Paper and cardboard, plastics, glass, metals, edible oil and fats, biodegradable waste, street litter, clothing	Plastic, paper, glass, organic waste, clothing and footwear, electrical equipment, edible oils and fats, wood	Paper, plastic, glass, metal, beverage cartons, textiles, oil, wood, tires, electrical waste, lamps, batteries
Annual capacity of recyclable materials	-	243 Tonnes	1,700 Tonnes	11,280 Tonnes	4,700 Tonnes
Annual operational costs for each or all of the centres	-	€5,830	€4,004,904	€91,472	€282,211
CAPEX costs for each or all of the centres	-	€245,200	€61,300 each centre	€756,027 (reflects 15% EU subsidised further 85%)	€61,300
Size of the centre	-	3,383 m ²	6,630 m ²	1,715 m ²	3,538 m ²
Other useful information	-	€52,840 For year 2022	-	-	-



Recycling centres / Drop-off points (2 of 2)

	Parma Italy	Livorno Italy	Siauliai Region Lithuania	Bergueda County Spain	Manlleu Catalonia (Spain)
Number of recycling drop-off points	5	2	25	3	1
Materials that can be dropped off for recycling	All urban waste that is not included in the D2D collection can be delivered to Recycling Centers by the citizens.	Textiles, small & large electronics, batteries, used oils, printer toners, tyres and hazardous items.	Bulky, bio-waste, tyres, WEEE, hazardous, wood, construction, textiles & packaging	Textile, WEEE, Bulky, Garden waste, hazardous waste, CDW, non packaging glass-plastic-metals, wood, etc.	Textile, WEEE, Bulky, Garden waste, hazardous waste, CDW, non packaging glass-plastic-metals, wood, etc.
Annual capacity of recyclable materials	17,981 Tonnes	25,000 Tonnes	15,800 Tonnes	2,141 Tonnes	1,852 Tonnes
Annual operational costs for each or all of the centres	€1,300,000	€350,000	€1,248,520	€358,236 Includes cost for bulky waste collection service.	€160,647
CAPEX costs for each or all of the centres	€500,000 Construction of new recycling center	€150,000	€12,210,000 €9.1m from EU funding Average cost €500k each	€830,000 Estimated cost of the facilities	€1,053,400 Includes improvement/extension project
Size of the centre	9,500 m ²	6,500 m ²	1,374 m ² (average)	-	5,522 m ²
Other useful information	Other drop-off points include: - Used clothes (in church courtyards) - Batteries (at supermarkets and shops) - Pharmaceuticals (Pharmacies)	-	-	€38,419 (Fees for accepting waste from other municipalities)	€76,885 (Annual income from entrance fees charged to commercial entities)



Composting and Anaerobic Digestion (1 of 2)

	Vienna Austria	Příbor Czech Republic	Hradec Králové Czech Republic	Jesenik Czech Republic	Jičín Czech Republic
How is separately collected bio-waste treated?	-	- Composting Plant - Biogas station	- Composting Plant - Biogas station	- Composting Plant	- Composting Plant
Total tonnage of bio-waste separately collected in the last year of data	-	1,466 tonnes	7,470 tonnes	1,304 tonnes	1,530 tonnes
Total annual capacity of the plant(s)	-	27,100 tonnes	15,000 tonnes compost 61,940 tonnes biogas	5,500 tonnes	2,000 tonnes
Compost generated per year	-	2,400 tonnes compost 1,200 tonnes digestate	7,000-8,000 tonnes per year	2,500 tonnes per year	1,100 tonnes per year
Is the compost sold back onto the market and what is the revenue made?	-	Yes revenue unknown	-	No offered free to citizens	No
How much energy is generated from AD/Biogas and what happens with this afterwards?	-	3,159,065 kWh/year projected quantity (Bio-gas station is private)	547 KW electrical output 603 KW thermal output	-	-
CAPEX cost of the plant(s)	-	€71,516 for comp. plant until 2023	€73,559 in 5 years	€726,870 EU subsidy of 90% for plant	€408,664
Year the plant was built	-	2008 - Composting 2022 - Biogas	2004 - Composting 2016 - Biogas	2014 - Composting	2011 - Composting
Annual OPEX for the plant(s)	-	-	-	€126,154	€98,312
Other useful information?	-	Comp. plant jointly owned with neighbouring town & operated by private company	-	-	-



Composting and Anaerobic Digestion (2 of 2)

	Parma Italy	Livorno Italy	Siauliai Region Lithuania	Bergueda County Spain	Manlleu Catalonia (Spain)
How is separately collected bio-waste treated?	- Composting Plant	-	- Composting Plant - MBT Plant	- Composting biological treatment facility	- Individual composters 81No.
Total tonnage of bio-waste separately collected in the last year of data	19,300 tonnes	-	13,748 tonnes	4,961 tonnes	2,258 tonnes
Total annual capacity of the plant(s)	167,000 tonnes	-	25,230 tonnes	20,000 tonnes	16,000 tonnes
Compost generated per year	53,000 tonnes	-	115 tonnes	2,798 tonnes	1,766 tonnes
Is the compost sold back onto the market and what is the revenue made?	No compost given away free	-	Yes €9,466	Yes €43,000	-
How much energy is generated from AD/Biogas and what happens with this afterwards?	9,000,000 m3/year	-	-	-	-
CAPEX cost of the plant(s)	€62,000,000	-	€4,682,405 for 6 plants	€7,200,000	€16,800,000
Year the plant was built	2023 - Composting	-	2006 - Composting, updated 2013	2001 - Composting	2015 - Composting
Annual OPEX for the plant(s)	€11,339,000	-	€442,764	€995,000	€123,309
Other useful information?	Discount incentives plus free training & equipment for domestic composting	-	-	€1.45m annual income related to entrance fees	Estimated bio-waste treated in situ with home-community composting: 16,2 tonnes

Reuse centres / Repair cafes (1 of 2)

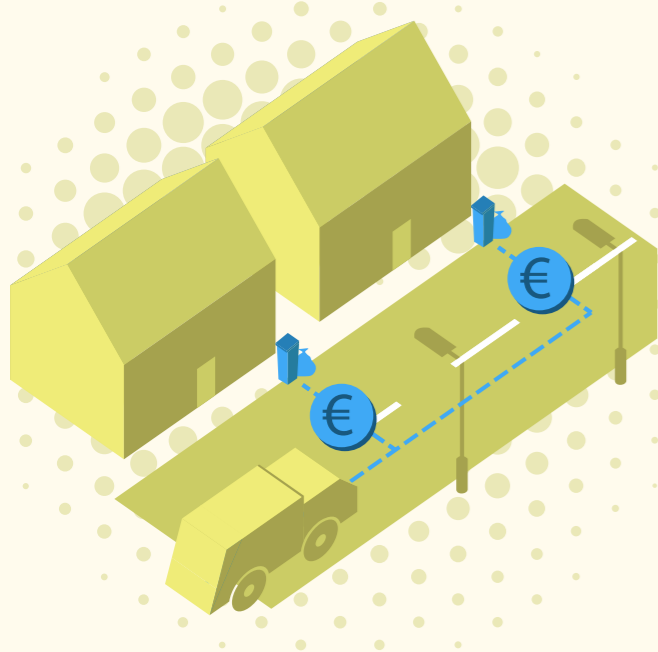


	Vienna Austria	Příbor Czech Republic	Hradec Králové Czech Republic	Jesenik Czech Republic	Jičín Czech Republic
Annual operational costs to run the centre/cafe (staff, rent etc)	-	€4,250	€23,294	€25,249	-
CAPEX costs to host/build the centre	-	€40,866 (reflects 15% EU subsidised further 85%)	€22,477	€1,226	-
Annual income received from revenue generating activities	-	€6,130	€11,320	€3,678	-
Amount of staff and volunteers hired	-	1 x Permanent 1 x Part time	2	1	-
Other useful information	-	In 2022, 77 tons of items went through the Re-use center and citizens took them away for a small fee	For the year 2022, 277,000 CZK was generated in the RE-USE project. The money from the public collection of Re-use points went to the city forests department, which used it to buy trees. From the charity shop, the proceeds from the collection will go to Technical Services, which will plant flowers in flower beds in the city	-	-

Reuse centres / Repair cafes (2 of 2)



	Parma Italy	Livorno Italy	Siauliai Region Lithuania	Bergueda County Spain	Manlleu Catalonia (Spain)
Annual operational costs to run the centre/cafe (staff, rent etc)	-	€12,000	€20,677	-	-
CAPEX costs to host/build the centre	-	€20,000	€104,860	-	-
Annual income received from revenue generating activities	-	-	-	-	-
Amount of staff and volunteers hired	-	12	1	-	-
Other useful information	-	-	Average area of reuse centres: 29,304 m ²	-	-









Pay-as-you-throw infrastructure (1 of 1)



	Parma Italy	Livorno Italy	Siauliai Region Lithuania	Bergueda County Spain	Manlleu Catalonia (Spain)
Description of PAYT system implemented	40 litre bins with RFID tags for residual waste, linked to personalized invoicing system	Similar system to Parma that is being rolled out: using RFID bins and bags	-	PAYT system planned for 2025	Fixed household fee + variable fee for biowaste and residual waste depending on number of collections/deliveries
% of population covered by the PAYT system	100%	15%	-	-	100%
Infrastructure required for system (e.g. new bins, RFID codes & software)	2 systems: Ecos for bins and bags reading and SAP for the billing. Also new bins and bags with RFID.	RFID bags, new bins with RFID	-	Bins, caddies with tags, bags with tags, closed boxes with user ID systems, van ID, portable lectors & management platform	Bins, bags and caddies with tags, closed bins with user ID systems, van ID, portable lectors & management platform
CAPEX costs when PAYT was started	€4,000,000	€160,000	-	-	€204,816
Additional OPEX costs for PAYT (if separate from collection budget)	Costs are included in the opex of the door-to-door separate collection system.	€320,000	-	€30,086 Includes communication and publicity activities	€222,423
Other useful information	Almost 98% of the waste bills issued in 2016 to private citizens benefit of the lowest bill thanks to PAYT system	-	-	Description of ID tech: RFID container identification bracelet or vehicle antenna (UHF) and buckets/bins with Tags to be identified. €20k: Estimation of costs for user ID system program	€142 fixed household fee + variable fee for biowaste (food and garden) and residual waste depending on the number of collections/deliveries

Highlights from the Data



Total Waste Budget

	Population 	Total Budget 	Separate collection of MSW 	Residual waste per capita 	Total MSW per capita 	National average Total MSW per capita 
Vienna	1.93m	290m	36%	262	476	834
Příbor	8,344	3.67m	62%	129	275	570
Hradec Králové	90,596	4m	49%	184	362	570
Jesenik	10,665	693,683	72%	134	488	570
Jičín	16,000	796,895	21%	190	356	570
Parma	196,764	39.37m	81%	106	569	487
Livorno	159,000	32m	62%	201	530	487
Siauliai region	267,717	10.86m	44%	211	375	480
Bergueda County	40,046	3.83m	67%	143	436	472
Manlleu	21,164	2.46m	83%	62	378	472

Composting Plant

Capacity 	CAPEX Costs 
-	-
7,500	71,516
15,000	73,559
5,500	726,870
2,000	408,664
167,000	62m
-	-
25,230	4.68m
20,000	7.2m
16,000	16.8m*

Recycling Centres

Capacity 	CAPEX Costs 
-	-
243	245,200
1,700	61,300
1,280	67,640
2,700	282,211
17,981	500,000
25,000	150,000
15,839	12.1m
2,141	830,000
1,852	1.05m

*Inclusive of RW treatment

Conclusions

So, what can we make of all this data?

As mentioned at the start, this report has been designed with the aim of providing city officials, waste professionals and consultants with a wide summary of the costs associated with critical waste infrastructure. It is far from being a comprehensive overview that can give you absolute clarity on the costs of a composting plant, recycling centre etc... Instead, this data can give the reader a good insight into what it cost in a certain area of Europe before, so that readers are better informed as to what it will likely cost for you if you are based in a similar region.

A true comparison between cities on certain infrastructure cannot be made, despite our best efforts in this report to provide an introductory summary and overview. This is due to several factors relating to the data - especially how cities collect their data and what they report. In each local context there are many caveats and specific factors at play which determine the unique costs in each city. For example, some composting plants will have anaerobic digestion added on, some will also have an MBT function included. Some cities operate a hybrid system of door-to-door and street containers, and the nature of the hybrid system differs in each city. In some locations the region has been able to secure EU funding to build and operate key infrastructure, whilst in others it is in the hands of private companies.

All this means that in many cases, it is not quite that we are comparing apples with pears but rather that we are comparing two different kinds of apples. Readers must be aware and understand this when viewing the report and using it to inform their own financial decisions.



We have tried our best to include this detail to provide nuance within each of the data sets above. This issue is a symptom of a wider problem regarding waste data in the EU. We continue to lack the proper enforcement of EU regulations that harmonise what reuse, recycling or composting can be defined as, where they even exist. Data continues to be very hard to access, with municipalities themselves often struggling to provide an overview because it involves a range of stakeholders across city departments and waste companies.

One key recommendation this paper would make is that city officials invest time in their data management. Outlining the key performance indicators of the system, knowing who will have this data and requiring these actors to provide it on a yearly basis should all be compulsory for cities serious about improving their waste management.

However,, from this research there are a few key conclusions that we can make. To begin with, we can confirm the correlation between the cost of a plant/centre and its capacity size. The bigger capacity to recycle or compost waste requires more CAPEX upfront and continued OPEX.

However what is also clear is that the size of a municipality's waste budget does not immediately correlate with the performance of the system. A city can have all the money in the world that it seeks, but without policies being properly designed to make it easy to do the right thing, tailored to the local context and keep flexibility in the system for future changes, then a large budget is not guaranteed to deliver results. **The Zero Waste Cities model we have tried and tested with over 480 municipalities in 15 European countries** provides the framework for how to do this, achieving impressive results whilst also offering many cost saving benefits.

Seeking funding for your zero waste city or business?

At Zero Waste Europe, we are working with investment organisations who want to fund environmentally sustainable projects, helping create new financial vehicles that free up accessible capital for zero waste solution providers. Providers must be able to showcase clearly the funds they need and the impact this funding would have locally - from an environmental, economic and social perspective. With this information, we can then proceed in identifying the right financial vehicle and potential investor(s) for your project.

If you are interested in learning more, please contact the Head of Local Implementation, Jack@zerowasteurope.eu for more information



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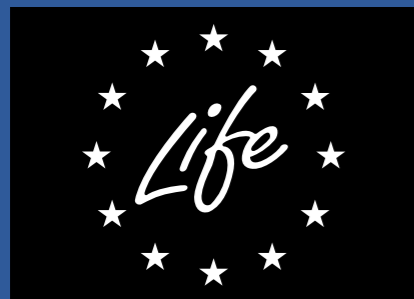
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