

General data

Population	405,657
Surface	301 km ²
Density	1350 inhabitants/km ²
Urbanisation class	C (20 – 29% multi-family houses)
Paper & cardboard recycling rate	N/A



www.szczecin.eu/en

National and regional system

Legislation & targets	The national legislation foresees an obligation of separate collection for paper & cardboard, glass, metal and plastic) and it sets a recycling target of 50 % for all of these waste streams jointly by 2020. No specific recycling target thus exists for paper and cardboard. ¹ Municipalities are responsible for setting up a waste management scheme on their territory.
EPR system	An Extended Producer Responsibility for packaging has been set up in 2000 which is executed both individually and collectively.

Waste collection scheme

In Szczecin, separate collection had been introduced in 1998, when the first recycling yard ("ecoport") was opened up. The municipal waste management system covers owners of occupied properties and owners of properties with educational and social functions, and municipal cemeteries. Public administration buildings are not included in the system. Small shops are covered by the system, provided they are located on "mixed properties", i.e. when there are also flats or dwellings on the same property. Lone standing shops don't enter the system but have to conclude individual contracts. The municipality coordinates and supervises the waste management system, but it gives out the contracts to private companies via tendering for each of the four city sectors individually.

The municipal waste management system in Szczecin combines Door-to-Door (DtD) collection with Bring Banks (BB) and recycling yards (RY). The largest quantities get collected via the DtD collection. Recyclables get collected separately (glass, paper, plastic/multi-material/metal packaging) in bags of 60 or 120l and are picked up every two weeks (detached houses) up to twice per week (for some multi-occupied properties). The trucks for collection are of different size (10-20t) and have an internal press, there are no specific trucks for the collection of PFR.

Szczecin has 7 recycling yards ("ecoports"), collecting up to 16 different fractions separately². An eighth RY is in planning. Paper and cardboard packaging are collected in containers between 1.1m³ - 30m³.

In some areas, particularly urban areas with large multi-family buildings the system is complemented with bring bank containers for glass, plastic/metal/composite packaging, and paper.



Figure 1: Bags for DtD collection of recyclables



Figure 2: Bring Bank



Figure 3: Ecoport

Service to the citizens: litres/inhabitant

N/A

¹ Separate collection obligation: Art 23.1 <http://isap.sejm.gov.pl/DetailsServlet?id=WDU20130000021> and Art. 3. 2. <http://isap.sejm.gov.pl/DetailsServlet?id=WDU19961320622>. General recycling target: <http://www.monitorpolski.gov.pl/MP/2016/784>, page 98 and <http://isap.sejm.gov.pl/DetailsServlet?id=WDU20130000888>, annex 1.

² glass packaging; paper; plastic, metal, and composite packaging; furniture and other high volume waste; used electric and electronic equipment; used cartridges and toners; used batteries and accumulators; used tyres; chemicals and their packaging; outdated medicines and their packaging; fluorescent lamps and bulbs; used engine oils; biodegradable and green waste; floor covering; carpets and textiles; building and refurbishment wastes in selected ecoports.



Information and communication

Szczecin recognises the importance of informed citizens, of education and environmental awareness and conducts various communication activities towards their citizens. The municipality hands out leaflets and educational materials for property owners, citizens and schools during activities and includes supplements to local newspapers. On the local TV channel the cyclic Information Programme "Ecoexpress" features reports on waste management topics. Once specific target group are school children. For this target group, a specific educational centre has been set up at one of the ecoports, welcoming around 200 school classes per year. In addition, activities at festivals allow for children to learn how to sort waste.

The citizens that responded to the questionnaire feel fairly well or very well informed about waste sorting in general and sorting of paper and cardboard in particular, the information provided therefore seems to be sufficient. The responses to the questionnaires for local citizens show that the mostly used source of information for sorting instructions (in general and specifically for PfR) are those on the containers/bags themselves. Furthermore the websites of the municipality and the collector are popular information means.

For the other stakeholders there is a discrepancy on level of information of citizens: NGO/association/researchers (2 respondents) and employees of WM department (16 respondents) think that the citizens are well informed about how to sort their waste in general and paper & cardboard specifically, while one of the respondents from a waste management company (3 respondents) feels the citizens aren't well informed about how to sort their waste. Two of them furthermore don't think that the majority of the citizens sort their waste. No specific campaigns for the recycling of paper are conducted.



Figure 4: Educational centre at the ekopark

Evolution paper & cardboard collected

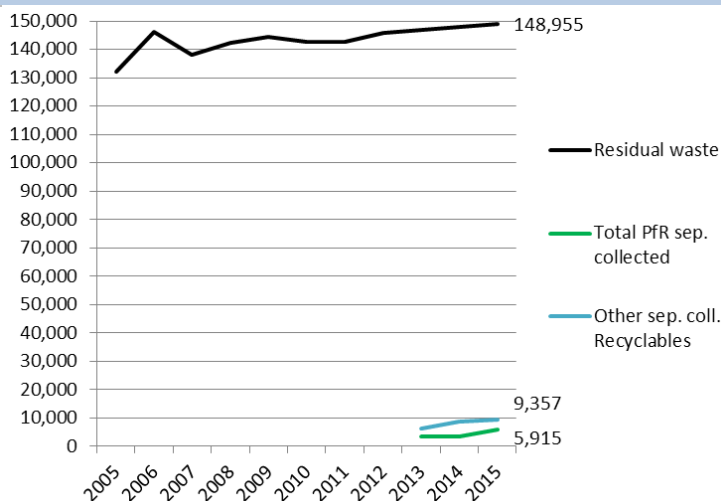


Figure 5: Evolution of waste collection in Szczecin (in t)

The current waste management system started operating in Szczecin in 2013. Only total amounts of municipal waste are available for the years before 2013.

As figure 5 shows, less than 10 % of all municipal waste gets collected separately in Szczecin. A small positive trend can be noted over the course of the past three years (see table below):

	2013	2014	2015
TOTAL separate collection	6.35 %	7.63 %	9.30 %

Table 1: Evolution of separate collection (2013-2015, in %)

Paper and cardboard waste treatment

All separately collected PfR is sent for recycling (DREC). Corrugated cardboard is separated and sold as 1.04.00, while the rest is baled as mixed paper (1.02.00). Paper and cardboard in the residual waste is sorted to the high calorific fraction and sent to incineration.

There is no information available about the quality of PfR.

Costs and revenue, resources

The fee system for citizens in Szczecin differs for citizens that live in detached houses and for those that live in multi-family houses. For inhabitants of detached houses the waste fee is 50 PLN if waste gets sorted and 80 PLN if the waste doesn't get sorted.³ In multi-family houses the waste fee is calculated on the basis of water consumption: 4 PLN/m³ of used water (when sorting waste) and 5 PLN/m³ (when not sorting waste). In the case of recurring impurities, the respective households faces increased fees (from "sorted" to "unsorted") for the next months.⁴ In unoccupied properties, the fee is dependent on the number and capacity of bins and their emptying in a given month. The same is true for those shops that are included in the system (see fees in footnote).⁵ Properties with educational and social functions and municipal cemeteries pay their fees directly to the municipality on the basis of the declaration form.

Stakeholder satisfaction

Overall, how satisfied or dissatisfied are you with the waste management services provided by your municipality?

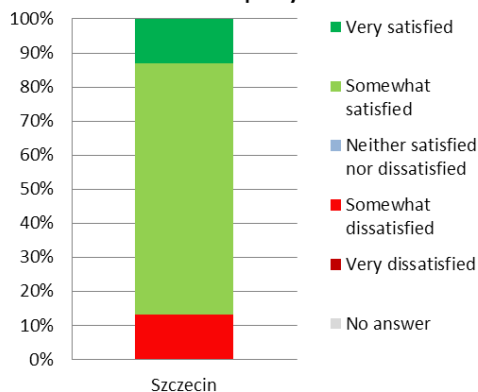


Figure 6: Overall satisfaction with municipal WM services (citizens)

Agree or disagree with the following words describing the waste management services provided by your municipality

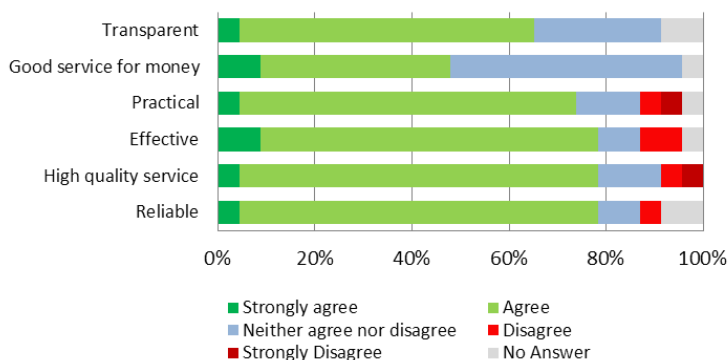


Figure 7: WM services characteristics (citizens)

Citizens: > 85 % of the sample⁶ is satisfied with the waste management services provided by the municipality, but still 3 citizens answered that they were somewhat dissatisfied. This dissatisfaction seems to come from a doubt in the efficiency, practicality, high quality servicing, and reliability of the service. However, more than 70 % of the sample agrees or strongly agrees with describing the system in these words. In a more depth analysis it would be interesting to investigate which concrete elements of the system are considered as problematic by some citizens.

³ 50 PLN = 11.72 €, 80 PLN = 18.76 € (exchange rate of 10.8.2016)

⁴ This measure very seldom needs to be taken for detached houses. For multi-family properties this occurs more frequently, but the measure doesn't prove to be very effective, due to the facts that a) nobody feels responsible and b) the fees get spread between all households, it therefore doesn't show a real effect. The municipality is therefore considering increasing the difference in the fees for sorted and unsorted collection.

⁵ Sorted waste: 80L bin- 8,02 PLN; 110 L - 10,79 PLN; 120 L - 11,77 PLN; 240 L - 23,12 PLN; 360 L - 32, 47 PLN; 800 l - 68,04 pln; 1100 l - 86,79 PLN. Unsorted waste: 80 L bin - 10,03 PLN; 110 L - 13,49 PLN; 120 L - 14,71 PLN; 240 L - 28,90 PLN; 360 L - 40, 59 PLN; 800 L - 85,06 PLN; 1100 L - 108,49 PLN.

⁶ The questionnaire was filled out by 25 citizens from Szczecin.



Please indicate to what extent you agree or disagree with the following statements:

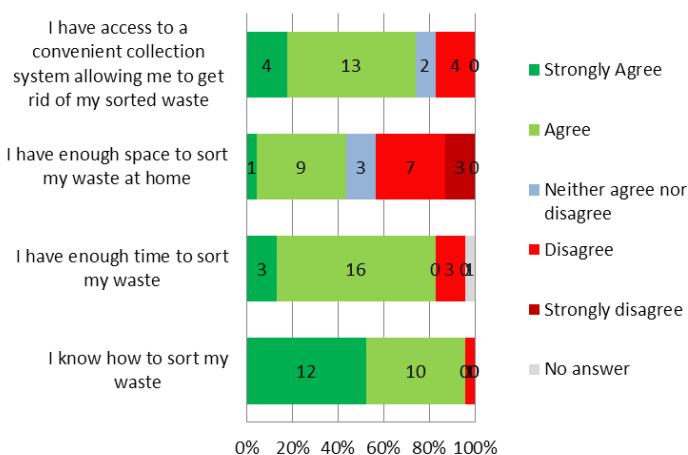


Figure 8: Sorting at home (citizens)

All respondents consider sorting their PfR separately as easy or very easy. The main issue that can potentially hinder citizens from sorting their waste at home seems to be that some citizens feel like they don't have enough space at home to do so. Time and the convenience of the system could potentially be issues as well, while the level of information seems to be high enough for the citizens represented here.

According to the answers provided the environmental consciousness amongst the citizens represented is very high. It can be assumed that this is not the case for all citizens of Szczecin. For a more in depth analysis it would be interesting to also investigate amongst other parts of the population to get a better picture of the citizens' impression of the system.

Respondents from the other stakeholder groups identify a number of problems with the waste management system in Szczecin (see below). The respondents from the waste management companies note a lack of participation in separate collection by both the citizens and the small shops & businesses.

Main problems/challenges

	Municipality (<i>excel</i>)	Citizens (25) (<i>questionnaire</i>)	Waste management companies (4) (<i>questionnaire</i>)	Employees of WM department (16) (<i>questionnaire</i>)	NGO/ association/ researcher (2) (<i>questionnaire</i>)
Impurities/contamination	X	X	XX	X	X
Littering/fly-tipping/unpleasant surroundings	<i>some</i>	X	XX	XX	
Vandalism of containers	X	X	X	X	
Blocked access to bins/containers	<i>frequently</i>	X	XX	X	XX
Overflowing bins/containers	X	XX	X	XX	XX
Theft/scavenging	<i>2/y per sector</i>		X	X	
Burning bins/containers	<i>2/m per sector</i>				
Inadequate opening of BB bins/containers for PfR		XX		X	X
Inconvenient distance (too far)		X			
Presence of materials other than paper*			XX	XX	
Moisture affecting the quality				X	
Low quantities of paper			X (<i>for shops</i>)	X	

* for both HH and shops

X = problem listed; XX = problem identified as main issue

Table 2: Problems identified by key stakeholders



- All stakeholders agree, that *impurities/contamination, blocked access to bins/containers, and overflowing bins/containers* are main and recurring problems.
- Many of the problems seems to be related to the bring bank system (unpleasant surrounding, vandalism, blocked access, overflowing bins/containers, inadequate opening).
- Another problem mentioned by the citizens is that the Bring Bank containers are sometimes mixed up after emptying (e.g. at a point of collection where plastics and glass containers were placed before, after emptying there were containers for plastics and paper). One of the respondents from the waste management companies, furthermore, mentions as another issue very low quantities of paper collected from shops.
- Citizens state that the following measures/changes could simplify their everyday sorting efforts:
 - More space at home for different bins
 - Collection bins/containers that are comfortable for use (size, shape, ..)
 - Collection bins/containers in closer proximity
 - Clearer sorting instructions provided by the municipalityThe last point was mentioned by four citizens. This is very interesting as in other questions the same people had answered to feel well informed about waste sorting.

More information:

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