



Zero Waste Europe was created to empower communities to rethink their relationship with resources. In a growing number of regions, local groups of individuals, businesses and city officials are taking significant steps towards eliminating waste in our society.

CASE STUDY #5



April-May 2015

THE STORY OF LJUBLJANA

FIRST EUROPEAN CAPITAL TO MOVE TOWARDS ZERO WASTE

In the last ten years, Ljubljana has managed to multiply its separate collection of compost, and recycling by tenfold and to reduce the amount of waste sent for disposal by 59% while maintaining waste management costs among the lowest in Europe. How did the Slovenian capital manage to avoid incineration and achieve the highest separate collection rates of all European capitals?

Snaga is the public company that provides waste management in Ljubljana and in nine suburban municipalities (380,287 residents). Thanks to clearly set goals and persistence in implementation of established measures, Snaga today manages to separately collect 61% of the municipal solid waste and generate only 121 kg of residual waste (waste that is neither recycled nor composted) per capita per year. Ljubljana is committed to halving the amount of residuals and increasing separate collection to 78% by 2025.



Snaga operates
Square km: 903.8
Municipalities: 10
Inhabitants: 380,287
Waste generation: 98,534 tn/year
Separate waste collection (2014): 61%
Residual waste per person/year: 121kg

First steps

The current waste management system in Ljubljana was developed when Slovenia became a member of European Union in 2004. At the time, the national municipal waste management plan included separate collection, regional mechanical biological treatment plants (MBT) plants, and two large-scale incineration plants.

However, the construction of these two incinerators has not yet started. In 2005, plans to build the first one in Kidričevo failed due to the strong opposition of local residents. The second one was announced in 2012 by the city of Ljubljana with the intention to build the burner as a part of the urban heating system. Meanwhile, Snaga was sharply increasing the separate collection rate in the city as Ljubljana committed to zero waste goals which made investment in incineration redundant.

The city began with separate collection of paper, cardboard, glass, other packaging and the remaining mixed waste (residual waste) in road-side containers in 2002. In 2006 Snaga started to change the system and started collecting biodegradable waste (kitchen and garden waste) at the doorstep for all households.

- 100 % publicly held
- Provides the service for 10 municipalities
- 426 employees

Goal #1: Door-to-door collection

In 2012 Snaga removed the roadside containers for paper and packaging and started collecting them door-to-door, with the same system as it started collecting biodegradable waste 6 years before. They first tested the model in 2011 in Brezovica - one of the smaller suburban municipalities. The system was highly effective: within months packaging recycling increased more than three times while residuals fell by 29%. After this successful test, Snaga decided to implement the model in Ljubljana and all suburban municipalities.



Goal #2: Reduced frequency of waste collection

After Ljubljana successfully introduced door-to-door collection in 2013, Snaga lowered the frequency of collection for residual waste while keeping the collection of recyclables and compostables the same. For areas with low-density population (predominantly single-family housing) one collection round every other week was introduced at first, but it was soon changed to one collection round every three weeks. In densely populated areas (mainly multi-apartment buildings) residuals were collected weekly whereas compostables and recyclables were collected several times per week.

This fully meets the key operational principles of intensive kerbside collection, i.e. if recyclables and compostables are collected more often than residuals, citizens who don't want their waste sitting around have an incentive to separate it at home.

Despite intensive communications campaigns carried out by Snaga before and during the introduction of the new scheme, at the beginning users in areas with low separate collection rates

opposed the reduced frequency for residual waste. Containers with residuals were packed full with waste.

But in the face of the pressure from residents and media, Snaga insisted on reduced collection frequency and further strengthened communication about the reasons for the change. As part of their strategy, Snaga organized a field trip for the media to see themselves that containers for residuals were full of recyclables. After taking out the recyclables, the residual waste that

actually belonged in that bin was a lot less than what people thought. As a result of this exercise, local and national media changed their mind and joined Snaga in asking the citizens to better sort their waste. Quantities of separately collected fractions continued growing, and by November 2013 the separate collection rate reached 55%.

At the same time, average monthly waste management costs for households had fallen, reaching 7.96 € in 2014. The costs for households in Ljubljana are among

the lowest in Slovenia. The average yearly cost across the country is 150 €/hhd.year, compared to less than 100 € in Ljubljana.



Eco island: Blue for paper, yellow for other packaging, green for glass.



Door-to-door collection.

Brown for biowaste & black for residuals.

Goal #3: Communication focused on prevention and reuse

In 2013 Snaga also shifted its communication strategy and redefined its activities, goals and responsibilities. They decided to move their key efforts away from awareness-raising on separate collection, and towards encouraging citizens to reduce the amount of waste they produce, promoting reduction, reuse and responsible consumption. The company launched the campaign 'Get used to reusing' which was later expanded to the national level in cooperation with the Chamber of Commerce. Snaga also focused on food waste, and ways that citizens can be more responsible about the amount of food they buy and throw away. The media, local NGOs, and food service providers joined this work.

Towards the end of 2013, the first reuse center in Ljubljana opened its doors. Surveys show that thanks to these efforts almost 70 % of residents make sure that their products are being reused when they don't need them anymore.

Since user satisfaction is based on quality service and communication, Snaga manages three web pages and uses social media (Facebook, Twitter). One of those web pages (www.mojiodpadki.si) is addressed to their users, allowing them to have information on consumption and to communicate with the company. Users may set up a free SMS reminder of the waste collection schedule, monitor collection costs and update their services.

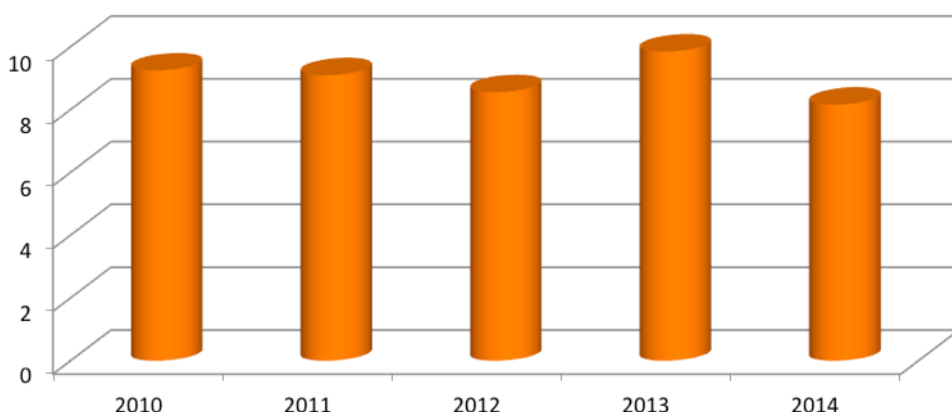


Results

In ten years, the quantity of recovered materials in Ljubljana increased from 16 kg per person in 2004 to 145 kg in 2014. By 2014, the average resident produced just 283 kg of waste, 61 % of which was recycled or composted. This means that the amount of waste being sent to landfill decreased by 59 % in ten years, and total waste generation decreased by 15 %. This reduction is even more remarkable when considering that Ljubljana already generated relatively low amount of waste for European standards, being its generation of 2014 a 41% less than the EU average (481kg per person).

A key ingredient for Ljubljana's successful results was the introduction of door-to-door collection, especially of biodegradable waste, which was the largest contribution to the sharp increase in recycling rates. As separate collection grew, the amount of residuals constantly declined. The scheme was backed up by Snaga's well-managed communications which had the population follow their goals and decisions, despite resistance early on.

Average monthly cost for household in euros



The current collection system includes eight collection centres, where residents and other users may bring waste which is not or cannot be collected at the kerb (door-to-door) and sort it into different categories: hazardous waste, metals, plastic, waste electronic and electric equipment, garden waste, construction waste, car tires, wood and wooden products, bulky waste, clothes and textiles.

Apart from collection centres, residents may also request the collection of bulky waste at their door once a year. Bulky waste is sorted and separated into specific materials, and then mostly recycled. Households may bring hazardous waste, smaller electronic equipment or home appliances twice a year to a specialised mobile unit that circulates the city according to a predefined schedule.

The big challenge: Zero Waste or Incineration

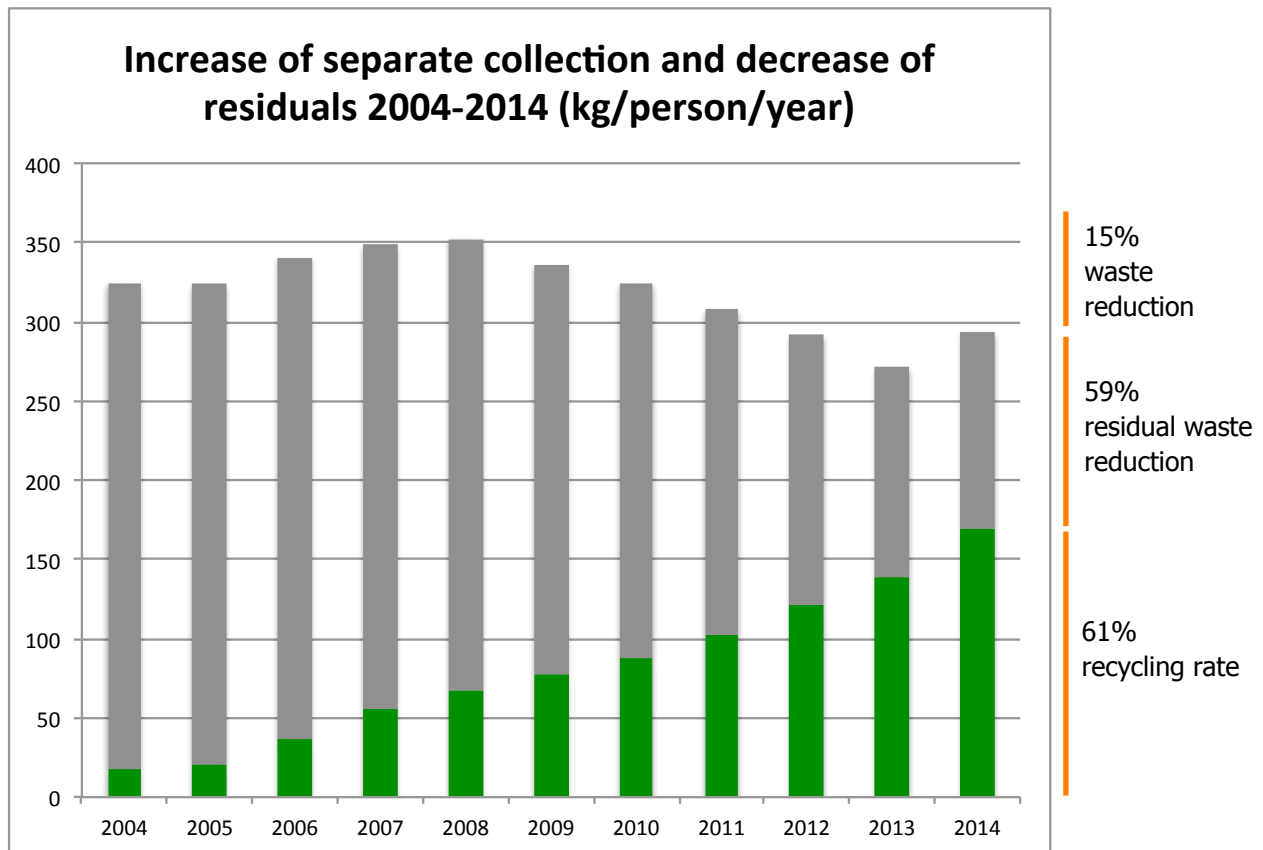
As already specified, in 2012 Ljubljana announced plans to build a municipal solid waste incinerator. By then the city was already recycling 45% of the waste, but the available landfill space was quickly filling up. Despite the growing opposition of local residents, public authorities outlined incineration as the best solution to the problem.

In the meantime, in 2013 separate collection rate rose to over 50 %, and to 60 % by 2014. At this point two dilemmas arose: What are the limits for successful separate collection? And what should Ljubljana do with residual waste if not burn it?

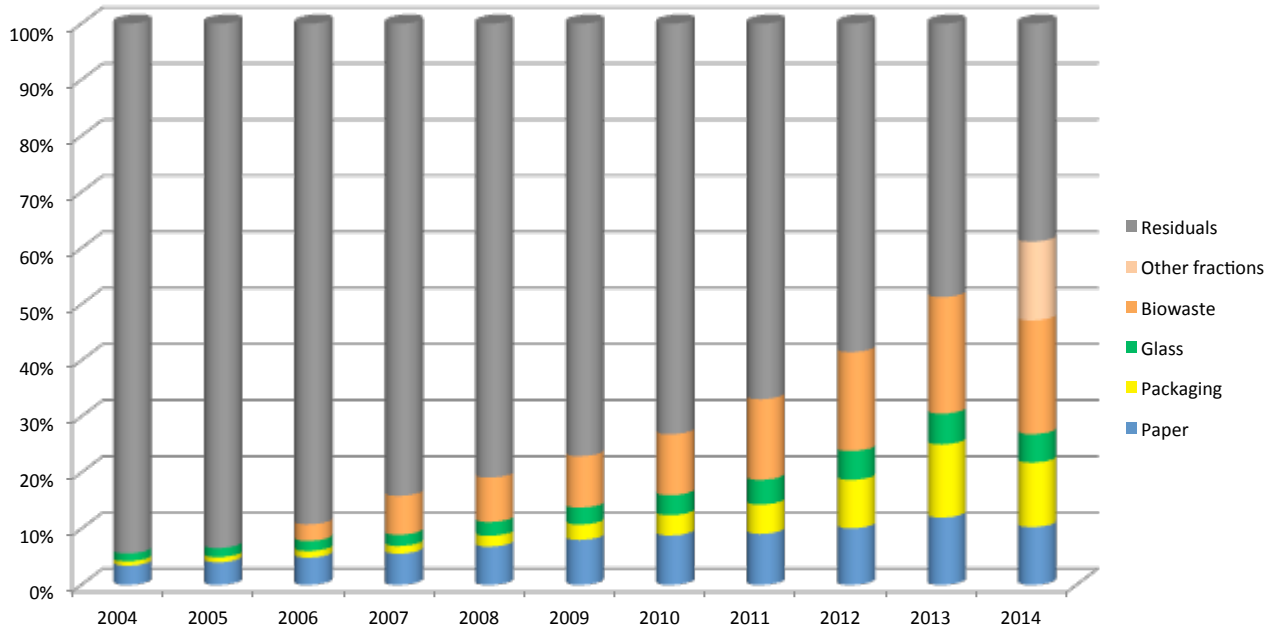
In 2014, Ecologists without Borders became a member of the Zero Waste Europe network, and concurrently they set up two site-visits for Slovenian

waste management companies and operators to see best Zero Waste practices. Their first visit was in December 2013 to Contarina - the European Zero Waste champion in the Veneto region (Italy), which has a population of over 500,000 and recycles over 85% of waste, with residual waste minimised to 50 kg/person.year. The Slovenian delegation observed their successful separate collection system, further supported by implementation of pay-as-you-throw, and experts from Zero Waste Europe explained the logistics and measures behind high recycling rates. At the second visit, in April 2014 they learned about the MRBT ([Material Recovery and Biological Treatment plant](#)) that upgrades traditional MBT (Mechanical-Biological Treatment) with the aim to extract additional materials from residuals while complying with obligations on pretreatment of residual waste as stipulated by the Landfill Directive, with no reliance on thermal treatment. In such sites, materials are then sent to recycling, including the light fraction.

Using what they learned from these visits, Snaga and Ljubljana City Council announced the commitment to adopt a Zero Waste approach, and to fully scrap the plans for incineration. In September 2014, the adoption of the Zero Waste strategy by Ljubljana (and 3 other pilot municipalities) was publicly announced at the Low Chamber of the Slovenian Parliament.



Evolution of collection per waste stream in % (2004-2014)



* Other fractions refers to waste collected separately in Ecoparks. No data is available for this concept prior to 2014.

Besides the City Ljubljana, Snaga also provides waste management to nine suburban municipalities, and intends to help them set the Zero Waste goals. In May 2015 municipalities attended first Zero Waste workshop, organized by Ecologists without Borders, where municipalities expressed their intention to prepare and adopt Zero Waste commitments in the next few months.

Ljubljana has been declared the European Green Capital for 2016. It

is worth mentioning that Ljubljana was the only one among the 5 finalists without any incineration plant nor plan to build it, giving it a significant advantage over the other candidates.

Zero Waste goals and future challenges

Ljubljana has committed to:
 - increase separate collection to 78% by 2025, and to 80% by 2035.

- reduce yearly total waste generation to 280 kg per inhabitant
 - reduce yearly residual waste to 60 kg by 2025 and 50 kg by 2035
 As with all Zero Waste champions, the key to success proved to be: political support, good management, and commitment to ever increasing Zero Waste goals. Ljubljana had them all.

Written by
Erika Oblak
 for Zero Waste Europe
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Sources

Snaga Javno podjetje d.o.o, Povšetova ulica 6, 1000 Ljubljana, Slovenija;
www.snaga.si



For more information visit:
www.zerowasteurope.eu
www.facebook.com/ZeroWasteEurope

Or contact:
info@zerowasteurope.eu
 Twitter @zerowasteurope