

LJUBLJANA, SLOVENIA



POPULATION
395,328

Inhabitants (2018, including surrounding municipalities)

Waste Generation Reduction

Upon Slovenia's accession to the European Union (EU) in 2004, the country's focus on municipal solid waste management (MSWM) policy underwent a significant shift. It centered on implementing nationwide separate waste collection systems, incorporating mechanical biological treatment (MBT) plants, and planning for two large-scale incineration facilities, which faced delays due to local objections. The national government introduced regulatory changes governing the types of waste that could be landfilled, leading to the closure of roughly half of all landfill sites across the nation.

Prior to the national policy changes, Ljubljana initiated separate collection efforts in 2002. This included the segregation of paper, cardboard, glass, and other packaging through "eco islands." Meanwhile, the remaining mixed waste, termed residual waste, was collected through a door-to-door system. Subsequently, the door-to-door collection of biodegradable waste began in 2006, addressing a significant portion of household waste.

After a successful pilot project, Snaga Ljubljana, the city's municipal waste management company, introduced an array of transformative changes in 2012. These included a pay-as-you-throw system that allowed free disposal of recyclables, while biodegradable and residual waste incurred charges based on the quantity disposed in underground kerbside containers. Moreover, door-to-door collection was optimized with color-coded separate bins, and collection frequency for residual waste was reduced. Residents received SMS reminders of collection schedules, and variable tariffs were implemented, making residual waste disposal significantly costlier than compostable waste.

In an effort to promote zero waste, re-use centers were established where residents could sell items and learn to repair household goods. Furthermore, a regional waste treatment center, RECERO Ljubljana, replaced the old Ljubljana landfill in 2015. This advanced facility processes biowaste through anaerobic fermentation to produce gas for powering the center. Residual waste is directed to a mechanical treatment facility, where recyclable materials are extracted, and solid fuel is generated. These comprehensive waste management measures have dramatically reduced the amount of residual waste destined for the city's landfill, with only 5% now being deposited there.



Source:iclej-europe.org

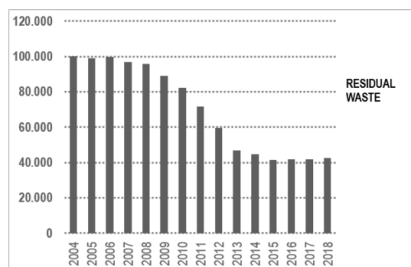


Source: frimufilms on freepik

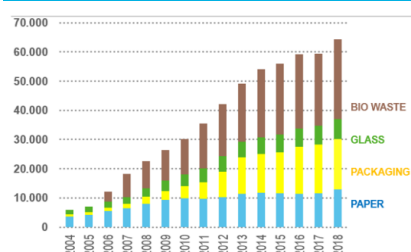


IMPACTS TO ACHIEVE SDG 11.6.1

Quantity of residual waste (tonnes/year)



Quantity of separately collected waste (tonnes/year)



Source: zerowastecities.eu

- MSW generation 358 kg/capita/year (2018) – 31% lower than EU average
- Amount of waste sent to landfill decreased by 95% 2004-2018
- Total MSW generation decreased by 15% 2004-2018
- Separate waste collection rate 55% (2013) increased to 68% (2018);
- 2013: first Re-use Centre opened- daily 75 items change their owner (2014) increasing to 150 (2018)
- 2015: RCERO regional waste-treatment centre – 155 Million EUR (EU Cohesion Fund, Ljubljana City and Slovenian government);
- 5% of residual waste ends up in landfill – 115 kg/capita/year (2018);
- Recovered materials: 16 kg/capita/year (2004) increased to 220 kg/capita/year (2018);
- 7,000 tonnes compost (2019);
- 60,000 tonnes solid fuel → 17,000 MWh electricity & 36,000 MWh heat
- 2025 aim: disposing waste 60 kg/capita/year & 78% separate waste collection rate;



INSTITUTIONAL SUSTAINABILITY

Improvements in waste reduction in Ljubljana have been led by the Municipality of Ljubljana and its waste management company, Sunaga Ljubljana. It should be noted that in Ljubljana there has been an important approach by the state to change the municipal solid waste management policy to aim for zero waste. Furthermore, the regulations governing the types of waste that can be landfilled by the state have been changed, resulting in the closure of approximately half of the landfill sites in the country.

For more than 14 years, the City of Ljubljana has adopted a systematic and holistic strategic approach, which has repeatedly ensured that the city and its environment are winners by adopting long-term, sustainable and circular solutions that involve our citizens.

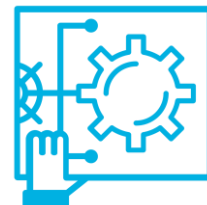


PLANNING & MONITORING

In 2013, Snaga transformed its communication strategy. It redefined its activities, goals and responsibilities and promoted awareness-raising activities on separate collection (to reduce the amount of waste produced by citizens themselves and to promote re-use and responsible consumption). It was later extended to the national level in cooperation with the Chamber of Commerce. Snaga also focused on food waste and encouraged citizens to focus on the amount of food they buy and the amount they waste. Media, local NGOs and food service providers were also involved in this initiative.

The first reuse centre in Ljubljana opened at the end of 2013. Surveys show that thanks to these efforts, almost 70% of residents confirm the re-use of unwanted items and more than 200 items are sold every day. This user satisfaction is said to be based on quality service and communication, and one of the web pages (www.mojiodpadki.si) is user-oriented, allowing users to obtain information about consumption, get information about consumption and communicate with the company users can communicate with the company. Users can receive free SMS reminders of waste collection schedules, monitoring of collection costs and service updates.

APPROPRIATE TECHNOLOGY



The Regional Waste Treatment Centre, RECERO Ljubljana, is the biggest environmental project in Slovenia, which comprises an extended landfill, leachate treatment and waste recovery facilities. The centre offers a mechanical biological waste treatment, where two types of waste are treated: sorted biological waste and residual mixed municipal waste. To reduce the quantity of waste, waste recovery is needed. The Regional centre has the important task of extracting as much usable material as possible and composting the sorted and collected biowaste.



Source: Ljubljana Regional Waste Management Centre

FINANCIAL SUSTAINABILITY



The initiative is financed through the “Pay-as-you-through’ system which introduced for segregation by Sanga Ljubljana. It also implemented Variable tariffs, making residual waste disposal significantly costlier than compostable waste.

In addition, The City of Ljubljana is building an interdisciplinary value chain with economic, social and environmental benefits in mind. The City of Ljubljana is building a multidisciplinary value chain with economic, social and environmental benefits in mind, introducing responsible management of all resources - from financial to human resources - and strengthening innovation and competitiveness in all areas of municipal administration.

STAKEHOLDER INVOLVEMENT / INCLUSION OF INFORMAL WASTE SECTOR



The main actor of the initiative is the City of Ljubljana, Snaga Ljubljana, re-use centers, RECERO Ljubljana - a regional waste treatment center, a mechanical treatment facility, and residents. To involve all the stakeholders from civil society to business and public sector, re-use centers were established as a platform where residents could sell items and learn to repair household goods. One of the web pages (www.mojiodpadki.si) is user-oriented, allowing users to obtain information about consumption, get information about consumption and communicate with the company users can communicate with the company. Users can receive free SMS reminders of waste collection schedules, monitoring of collection costs and service updates.



SOURCES

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