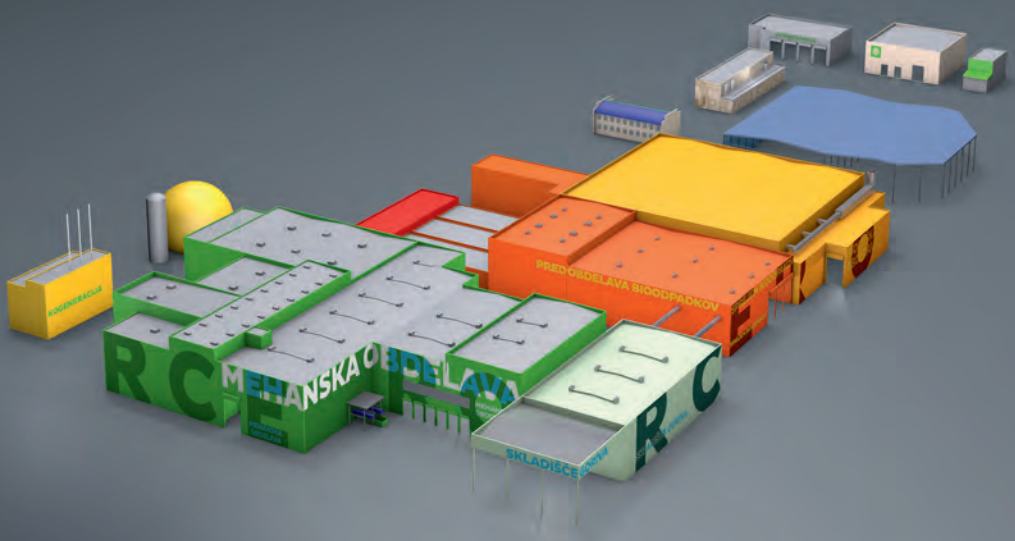
Regional Waste Management Centre Ljubljana

RCERO
LJUBLJANA



37

700.000

37 municipalities and
700 thousand citizens included

1/3

Processing mixed municipal waste and biodegradable waste for one third of the Slovenia

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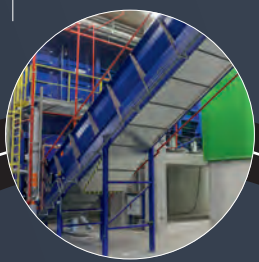
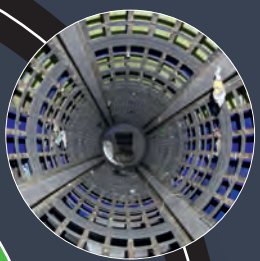
Processing of mixed municipal waste

Mixed municipal waste is transported via the green and blue parts of the plant.

The shredder roughly shreds waste.



Shredded waste proceeds into a sieve that separates it according to size.



It is vital to recover the maximum possible amount of usable material from mixed municipal waste. This is made possible by high-tech mechanical waste treatment. In addition, biodegradable waste is also separated mechanically, and then proceeds to be treated in the neighbouring facility within RCERO. After treatment, only 4.9 per cent of residual waste is disposed at the Barje landfill.

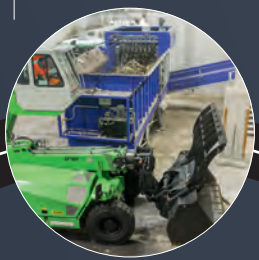
Unrecyclable materials are processed into fuel, which has a similar calorific value to brown coal. The fuel actually consists of parts of unprocessed waste.

Separators sort different types of plastic, paper and other usable materials, aluminium and other metals at last being collected by a magnet. All sorted materials proceed to recycling facilities.

Depending on the size, waste travels on different conveyor belts. Separators above the belts separate waste according to its characteristics. All processes are coordinated from the control room.

Processing biodegradable waste

Biodegradable waste is sieved at first: smaller parts can immediately proceed to the bioreactor (fermenter), while bigger bio waste is first shredded and additionally sieved, and solid particles and metals separated.



The bioreactors are large concrete horizontal tanks where organic substances are biodegraded (digestion) without the presence of oxygen: anaerobic fermentation. A similar process takes place in the stomach of ruminants.

There are special bacteria in the bioreactor which multiply and eat waste, which then decomposes to produce biogas. The separated biogas is collected and used to generate electrical and heat energy, which are needed for the remaining processes.

The biomass which comes from the bioreactor is dewatered, ventilated or aired and left to mature in order to create compost.

Biodegradable waste is transported via the yellow, orange and red parts of the plant.

Biodegradable waste is processed by procedures which are similar to natural processes, but much faster and under anaerobic conditions. In addition, a great deal of gas used for electricity and heat generation is produced from the biological part of mixed municipal waste and separately collected biodegradable waste.

150.000

20.000

RCERO Ljubljana can annually receive 150 thousand tonnes of mixed municipal waste and over 20 thousand tonnes of biodegradable waste.

RCERO LJUBLJANA

30.000

60.000

7.000

Products leaving the plant amounts up to 30 thousand tonnes of raw, recyclable materials, up to 60 thousand tonnes of fuel and 7 thousand tonnes of compost annually.

< 5%

After processing, less than 5 per cent of residual waste ends up at the landfill.

The biogas produced in the biological processing of waste generates sufficient electrical and heat energy needed for the operation of the regional centre.

Gas produced from waste is collected in the yellow balloon (gas tank) and is called biogas.

In the facilities of the regional centre, we prevent waste production (wastewater is returned to the technological process) and promote recycling and reuse.
A part of the equipment in the administrative building is made of waste objects and reused materials which have been turned into up-cycled furniture.

City of Ljubljana

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