WHAT IS RCERO LJUBLJANA?

WHY RCERO LJUBLJANA?

THE ROLE OF THE EU, THE STATE AND MUNICIPALITIES

MECHANICAL-BIOLOGICAL WASTE TREATMENT

UNIQUE IN SLOVENIA, A MODEL FOR EUROPE

TIME FOR THE CIRCULAR REVOLUTION
What is RCERO Ljubljana?

Ljubljana Regional Waste Management Centre (RCERO Ljubljana) is the biggest environmental project in Slovenia supported by the Cohesion Fund and the most modern facility for waste treatment in Europe, processing waste from a third of Slovenia.

The regional centre comprises an expanded landfill, leachate treatment plant and waste recovery facilities. The new landfill has been used since 2009, the treatment plant has been in operation since 2011, while the construction of the mechanical-biological waste treatment facility, which was the most demanding part of the project, was completed at the end of 2015.

The main part of the regional centre consists of three facilities for mechanical-biological waste treatment, where two types of waste are processed: separately collected biowaste and residual mixed municipal waste. Bulky waste is also accepted and assorted.
Waste recovery is needed in order to extract raw materials and reduce the quantity of disposed waste.

The regional centre has the crucial mission of extracting the greatest possible amount of usable material and of composting separately collected biowaste.
A third of Slovenia’s waste at one site

RCERO Ljubljana is Slovenia’s biggest cohesion fund environment project and the best example of regional cooperation, which has brought together the biggest number of municipalities. Using innovative and sustainable technology, the plants and facilities process waste of 700,000 citizens.

The entire project, which was approved by the European Commission in April 2009, is run by Snaga Ljubljana public enterprise, as authorised by the City of Ljubljana and other municipalities.

The investment into RCERO Ljubljana project totals 155 million euros. In the 2007–2013 programme period, the EU’s Cohesion Fund contributed 77.5 million euros through its Environment and Infrastructure Operational Programme, while the remainder was financed from the central government and local budgets, and from the environment waste disposal charge.
The best waste recovery plant

The main part of the regional centre consists of three facilities for mechanical-biological waste treatment. Different biological processes take place in biowaste recovery facilities, so the buildings have been painted in warm colours, while mixed-waste facilities, where waste is processed mechanically, have been painted in cold blue and green colours.

Mechanical treatment of waste produces recyclable materials and materials used to produce solid fuel.

After treatment, only 4.9 per cent of residual waste is disposed at the Barje landfill.

Biological treatment of biowaste relies on the processes that occur spontaneously in nature, but are accelerated in the plant and take place without the presence of oxygen. Compost is produced from biowaste through the process of anaerobic fermentation.

Large quantities of gas produced during fermentation is captured and used to produce electricity and heat.
After treatment, as much as 95 per cent of seemingly useless mixed waste can be used as recyclable materials or fuel.

Mixed waste travels via the green and blue parts of the plant. Before waste collection trucks can dispose of the waste they carry, they travel through two doors, which serve to prevent the spreading of unpleasant smell.

Crane operators use computer guided claws to feed waste to conveyor belts transporting it to mechanical treatment.

Waste fractions travel on conveyor belts. There are separators above the belts that separate waste according to its characteristics. All processes are coordinated from the control room, where supervisors monitor the processes in the entire plant with 73 cameras.

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

The shredder roughly shreds waste. Shredded waste proceeds into a sieve that separates it according to size.

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

There are special bacteria in the bioreactor which multiply and eat waste, which then decomposes to produce biogas. The separated biogas is collected in a big yellow domed gas holder and used to generate electricity and heat, which are needed for the remaining processes in the plant.

The other product of anaerobic fermentation is biomass. When it comes from the bioreactor, it is squeezed out, aired and left to mature in order to create compost. Plants and facilities of RCERO Ljubljana can process over 20,000 tonnes of biowaste annually. Using state-of-the-art technology, treatment produces prime quality compost, which can be used to fertilize gardens and fields.
Unique in Slovenia, a model for Europe

In the facilities of the regional centre, we seek to prevent the production of waste at source (for example, waste water is returned in the technological process), recycle and reuse. Part of the administrative building has been furnished using waste objects and materials.

Preventing the production of waste, re-use and recycling reduce the use of natural resources and energy needed for processing them, which alleviates the negative impact on the environment.
Time for the circular revolution

For over a decade, we have been using a planet and a half to satisfy our needs and wishes. This means that we have been using 50 per cent more resources (energy, food, etc.) than the Earth can produce. Our mission is to put all our efforts into achieving higher economic value and quality of life using less natural resources. Our goal is a circular economy, where we do everything to keep different resources in the production and consumer cycle for the longest time possible. RCERO Ljubljana is of exceptional importance for our transition into a circular economy. RCERO Ljubljana recovers natural resources, practices re-use, and optimises and closes loops.
RCERO Ljubljana receives an enormous quantity of waste from over a third of Slovenia.

Useless waste becomes a major source of other raw materials.

- 30,000 tonnes of raw, recyclable materials
- Up to 60,000 tonnes of fuel
- 7,000 tonnes of compost
- 35,000 tonnes of digestate
- 6,000 tonnes of wood
- 17,000 MWh of electricity
- 36,000 MWh of heat

Using its innovative and state-of-the-art technology, RCERO Ljubljana recovers almost all the waste it receives: less than 5% (7,350 tonnes) ends up at the landfill.
RCERO Ljubljana – a unique and the most sustainable facility for waste recovery.

The best and the most modern plant of its kind in Slovenia and one of the bigger ones in Europe, which can accept over 170,000 tonnes of waste annually.