



Service for
the Future

Safe Disposal and Landfilling



www.fcc-group.eu

Safe Landfills

as a base for a Modern Waste Management System

Implementation of a Modern Waste Management System

Waste management centres are a basis for a comprehensive waste management system. Its building-up is a step-by-step procedure and depending on local requirements and feasibility. We are ambitious to protect environment from the very beginning.

1st Constructing a safe landfill according to EU – Standards

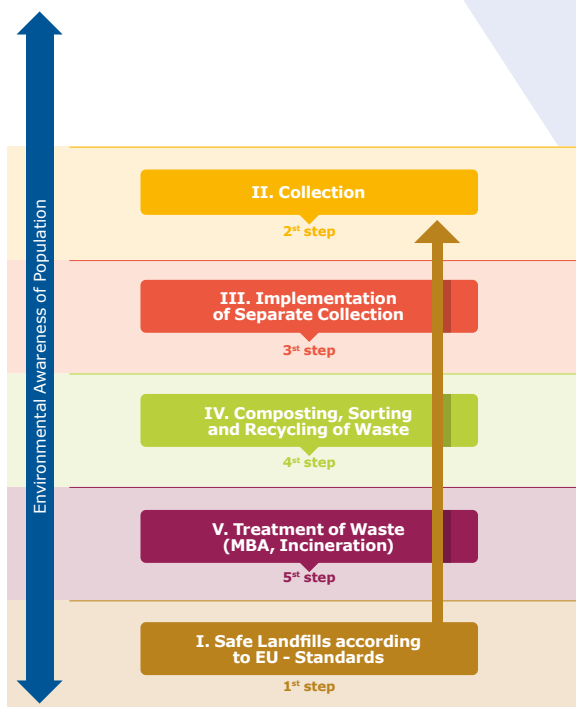
We design, construct and operate safe landfills. Essential environmental safety is secured through a multi-barrier-concept:

- Detection of a suitable location
- Installation of a bottom sealing
- Strict controls of incoming waste
- Experienced operation
- Carrying out re-cultivation and aftercare

2nd Start of waste collection and environmental awareness raising campaigns

Servicing population and institutions are carried out with proper equipment for all kinds of waste. Our environmental awareness raising campaigns are focused on children primarily.

Steps in FCC Environment CEE Waste Management System



3rd Implementation of separate collection

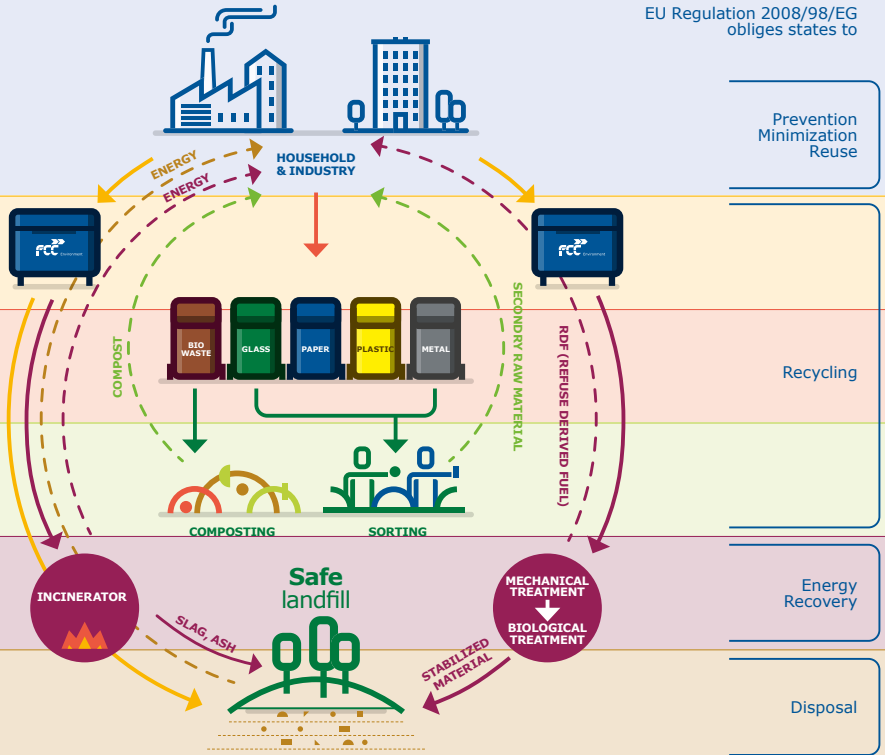
Separate collection is implemented in order to improve waste management and its further processing.

4th Sorting, recycling and composting of waste

First treatment measures are sorting and recycling as well as composting of waste.

5th Treatment of waste (mechanical-biological treatment, incineration,...)

Implementation of further treatment, such as mechanical-biological, incineration and RDF-production depends on needs and requirements based on countries' legislation and feasibility. We are experienced with all kinds of treatment processes.



Safe landfills

Saving resources, generating power

The Modern Waste Management System starts and ends with safe, sanitary landfills. It means that in spite of the prevention of waste, in conjunction with careful collection, separation and re-use, some types of waste that cannot be re-used or recycled will at any time remain.

A sanitary landfill is always the first step in waste management where a controlled waste disposal can be guaranteed. Any time waste needs a technically sophisticated and absolutely safe final storage solution that permits continuous monitoring to be carried out. Such facilities require drainage systems for collecting and treating leachates, as well as systems for the collection and utilization of landfill gas.

Our waste management centres comply with the highest safety standards and have each been certified in accordance with ISO.

We can offer every service connected with the process of safe and sustainable landfilling, from establishing the project, construction of the landfill and its operation, to the subsequent recultivation.

Landfills constructed by FCC Environment CEE have implemented technologies that help to create a better environment and also turn our waste into new energy and new resources.

Safe landfills can work as energy generators:

- High-quality fuels production: used for the district heating: 8,000 t/year
- Gases originating from the landfill are transformed into electricity (eco-power): approx. 88,000 MWh/year

By applying other technologies following products can be generated at the landfill sites:

- Mechanical-biological treatment: Leachate water (contaminated water) is made into clean water a quality close to drinking water (20,000 m³/year).
- Composting: Biogenic waste is processed in composting plants. These fertilizers and substrates can be returned to circulation by being used in agriculture.

1st step:

Constructing and operation of safe landfills according to EU – Standards



Elements of a Safe Landfill

- | | |
|---|---|
| 1 Landfill body
a) Active area
b) Re-cultivated area | 5 Degassing system and gas station |
| 2 Weighbridge | 6 Administration building |
| 3 Fence | 7 Waste treatment facilities and storage area |
| 4 System for collection of leachate water, leachate water basin & basin for surface water | 8 Cleaning pits for trucks |

1

Landfill Body 1a and 1b Landfill Halbenrain (AT) Re- cultivated landfill body



A landfill II is structured into different sectors with a separate discharge of rain and leachate waters. After several years of operation, the first sector is recultivated, while the active area is still available for disposing of incoming waste.

2

Weighbridge Landfill Arad (RO)



Every single truck passes the weighbridge where the amount of waste to be disposed is measured. Data is processed further to bookkeeping and technical department.

8

Cleaning Pit Landfill Hódmezővásárhely (HU)



Cleaning pits are an important installation to keep trucks proper.

4

Water Collection System Tainach (AT)



During the operation of a landfill, rainwater can infiltrate the landfill body and solve pollutants out of waste. This water is called leachate. To optimize the amount of leachate, the landfill sectors are "open" as short as possible. After closing a landfill sector, water cannot enter into the landfill body.

Surface water coming from pathways and unused landfill sections is collected in separate surface water reservoir.

5

Degassing System Landfill Hódmezővásárhely (HU)



Landfill gas arises from degradation of organic waste components. Within 15 to 20 years 100 to 200 m³ landfill gas is arising from 1 ton of household waste.

Treatment of landfill gas begins with collection of gas through gas wells. In a first phase gas is burned before volume is sufficient for producing electricity.

Our landfills group-wide



Legend:
● Local headquarter
● Capital city

Austria

- 1 **FCC WASTE MANAGEMENT CENTRE TAINACH**
landfill, splitting plant, ground sorting, transfer station and a collection yard
- 2 **FCC WASTE MANAGEMENT CENTRE HALBENRAIN**
landfill, mechanical-biological treatment facility, transfer station, power generation, laboratory
- 3 **FCC LANDFILL LICHTENWÖRTH IN AFTERCARE**

Czech Republic

- 4 **FCC WASTE MANAGEMENT CENTRE PRAHA-ĎÁBLICE**
landfill for municipal waste (closed), ground sorting, transfer station
- 5 **FCC WASTE MANAGEMENT CENTRE TISOVÁ**
landfill for municipal and other waste, composting and biodegradation plants, gas flare station, collection yard
- 6 **FCC WASTE MANAGEMENT CENTRE ŘEPIŠTĚ**
landfill for hazardous waste
- 7 **FCC LANDFILL ŽABČICE, LANDFILL NO. I (AFTERCARE), LANDFILL NO. II (ACTIVE)**
landfill for municipal waste, composting plant, gas flare station
- 8 **FCC LANDFILL ÚNANOV**
landfill, composting plant
- 9 **FCC WASTE MANAGEMENT CENTRE LODIN**
landfill for industrial waste, protected store of hazardous waste, sorting line, transfer station, composting and solidification plants
- 10 **FCC LANDFILL BLÁTO**
in aftercare
- 11 **FCC WASTE MANAGEMENT CENTRE LIŠOV**
landfill for municipal waste, sorting line, transfer station and a collection yard
- 12 **FCC LANDFILL VYSKYTNÁ**
in aftercare
- 13 **FCC LANDFILL BOREK U DAČIC**
landfill for other waste, including rubble and earth, composting plant, transfer station and collection yards
- 14 **FCC WASTE MANAGEMENT CENTRE ÚHOLIČKY**
landfill for municipal waste, sorting plant with alternative fuel production, collection yards, gas flare station
- 15 **FCC LANDFILL UHY**
landfill, transfer station, gas flare station

Slovakia

- 16 **FCC WASTE MANAGEMENT CENTRE ZOHOR**
landfill for municipal waste and hazardous waste, sorting plant, ground sorting, biodegradation area and a solidification plant
- 17 **FCC LANDFILL DOLNÝ BAR**
landfill for municipal waste, sorting line, ground sorting
- 18 **FCC WASTE MANAGEMENT CENTRE TRNAVA**
landfill for municipal waste, sorting line, ground sorting, vcomposting plant and a collection yard

Hungary

- 19 **FCC WASTE MANAGEMENT CENTRE GYÁL**
landfill for municipal waste, gas flare station, ground sorting, alternative fuel production and a composting plant
- 20 **FCC WASTE MANAGEMENT CENTRE HÓDM EZÖVÁSÁRHELY**
landfill for municipal waste, gas flare station, ground sorting and a composting plant

Romania

- 21 **FCC WASTE MANAGEMENT CENTRE ARAD**
landfill, ground sorting and a composting plant

Poland

- 22 **FCC LANDFILL RADOMSKO**
installation for disposal of industrial sewage & liquid waste, including hazardous waste
- 23 **FCC LANDFILL SADÓW (LUBLINIEC REGION)**
in aftercare first FCC landfill in Poland
- 24 **FCC LANDFILL BIAŁA**
landfill for hazardous waste

Serbia

- 25 **FCC LANDFILL LAPOVO**
landfill for non-hazardous waste
- 26 **FCC WASTE MANAGEMENT CENTRE KIKINDA**
landfill, ground sorting and a collection yard

Our services

We are reliable

We are a leading private waste management company acting in Central Europe and SEE-countries. Long-time experience, modern equipment and facilities completed with state of the art technology make us a reliable partner for you.

Safe and sustainable solutions

In everything we do in CEE, we adhere to EU regulations as a minimum. In most of our projects, we surpass even the strictest regulations by a significant margin. We aim to lower the impact that waste has on the environment and ensure that the future generations find the environment in better shape than we have.

We are your partner

Since 1990 a great number of municipalities have chosen FCC CEE, as their competent partner – in some cases in joint ventures – entrusting us with the management of waste disposal in accordance with EU-Standards. With our know-how waste management has been privatised successfully.

We are investor and operator

We invest in integrated waste management solutions considering local requirements and needs. Investing is a continuous process over years along with improving of the respective waste management system in your country.

business
waste solutions



municipal
& citizen services



environmental
services & supports



Service for the Future

FCC Central and Eastern Europe GmbH

A part of the Spanish FCC Group (www.fcc.es) and employs more than 4,600 people in 7 CEE countries.

FCC Group

acts in 30 countries with 58,000 employees and having more than one hundred years of experience.

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