

CIRCULAR ECONOMY – MISSION POSSIBLE

**Sofia Municipality
13/03/2019**



WHERE DOES THE WASTE OF SOFIA GO?

METAL RECYCLING PLANT

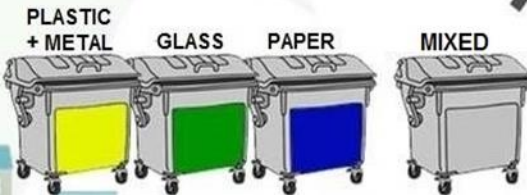
PLASTIC RECYCLING PLANT

GLASS RECYCLING PLANT

PAPER RECYCLING PLANT



WASTE SEPARATION FACILITIES



SEPARATION OF RECYCLABLE MATERIALS



MECHANICAL AND BIOLOGICAL WASTE TREATMENT PLANT



PHASE 3:
WASTE-TO-ENERGY
CONVERSION
FACILITY



RDF PRODUCTION

1. CAUGHT FLY ASH DEACTIVATION IN FACILITIES ABROAD
2. BOTTOM ASH RECOVERY IN CONSTRUCTION



LANDFILL - 16%

HEAT POWER AND ELECTRICITY PRODUCTION FOR OVER 70,000 HOUSEHOLDS

RECYCLED WASTE IS RETURNED TO HOUSEHOLDS IN THE FORM OF PRODUCTS



WASTE STREAMS AND ORGANIZATION

- Mixed municipal waste
- Metal, plastic, paper, glass
- Bio and green waste
- Bulky waste
- Construction and demolition waste
- Electrical and electronic equipment
- Batteries and accumulators
- Hazardous waste
- Tyres
- Textile



MECHANICAL-BIOLOGICAL WASTE TREATMENT PLANT



- ✓ Put into operation in 2015;
- ✓ Automated process of recycling and control in real time;
- ✓ Monitoring and data acquisition system (SCADA);
- ✓ Waste is transferred via belt transporters;
- ✓ Dust removing and decontamination systems.

MECHANICAL SEPARATION – BIO DEHUMIDIFYING PRODUCTION OF RDF



- ✓ In 2018, according to preliminary data, 367,106 tons of household waste was recycled in the MBT (mechanical biological treatment) plant;
- ✓ 86% waste recovery ;
- ✓ For the year 2018 the expenses for deductions under the Waste Management Act have been reduced by more than BGN 14 million

RDF production



For 2018 – 57,738 tons of RDF was provided for recovery in the cement plants, in accordance with the requested quantities and their maximum capacity.

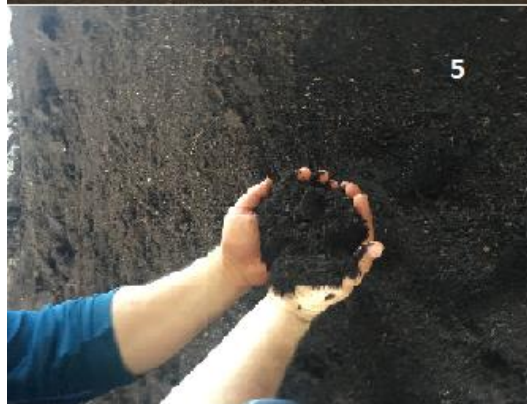
GREEN AND BIO WASTE



- ✓ The facility for biological treatment of green and bio (food) waste on the *Khan Bogrov* site was put into operation in 2014;
- ✓ Output capacity– 24 000 tons per annum;
- ✓ In 2018, according to preliminary data, were produced:
 - ✓ 2,907 MWh electricity;
 - ✓ 10,119 tons of compost.

COMPOST

- ✓ According to preliminary data for 2018 – 10 119 tons of compost was produced
- ✓ In 2018 – 35,13 tons of compost was distributed
- ✓ For 2018 – EURO 37 000 revenues from the sale of compost.



HAZARDOUS HOUSEHOLD WASTE

- ✓ System for separate collection of hazardous household waste:
 - ✓ Free collection from home by request on the phone;
 - ✓ Scheduled collection by a mobile picking station in different regions of Sofia.
- ✓ The separately collected hazardous household waste is transported to a site of a private company contracted with the municipality.
- ✓ Waste treatment is consistent with the type and quantity of collected hazardous household waste as well as with the waste hierarchy.
- ✓ In 2018, according to preliminary data, 5.6 tons were collected.



TEXTILE WASTE



In September 2018, a campaign was initiated for the deployment of 4 stationary and 1 mobile waste collection stations – 4.5 tons were collected for 20 days. As a result, and in order to upgrade the current system for separate collection of waste, it is envisaged that by the end of February 2019 there will be 20 containers for textile on the territory of Sofia Municipality.

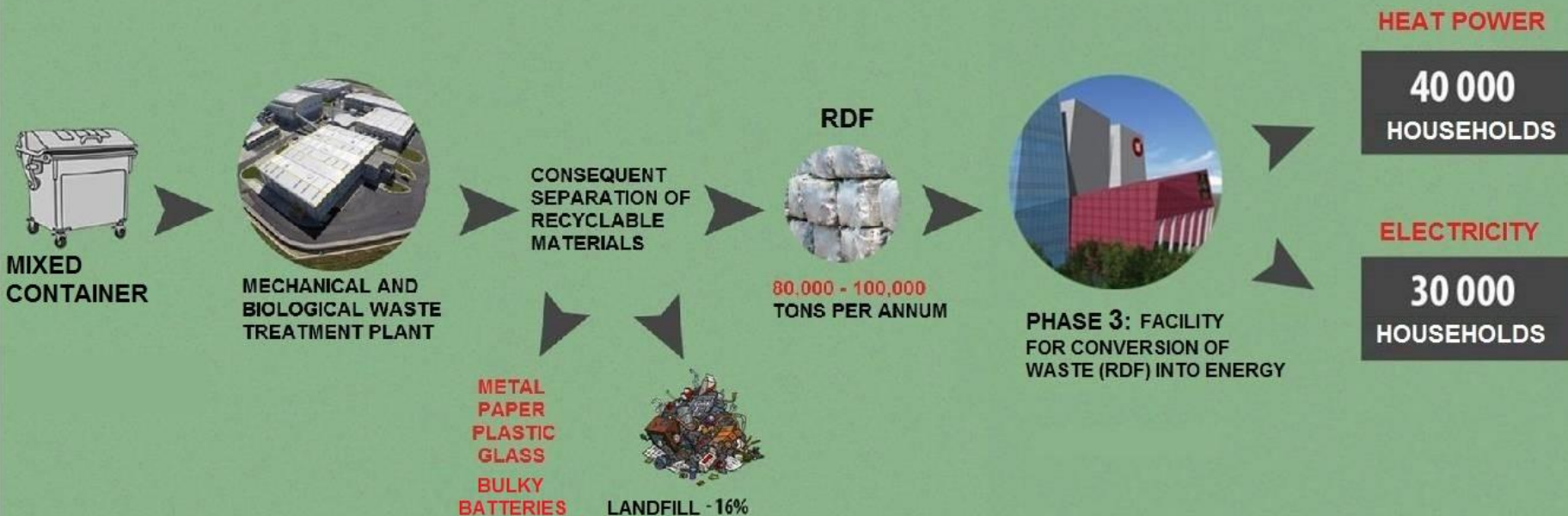
CONSTRUCTION WASTE



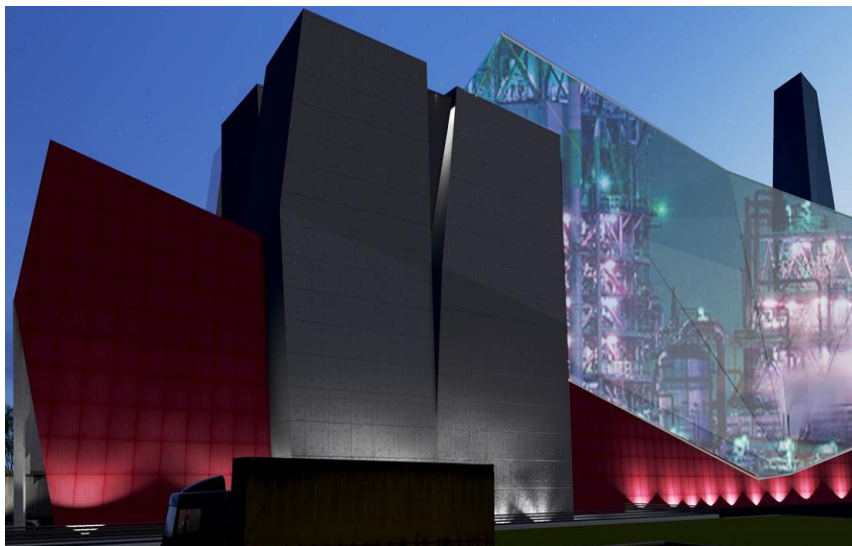
- ✓ Construction waste recycling facility – Vrazhdebna;
- ✓ The main modules are: a separating station, a drum sieve and a crushing machine;
- ✓ The capacity of the facility is 80 t/h or around 160 000 t/yr (260 working days per year);
- ✓ The facility is owned by the municipal company "Sofinvest" EOOD.



THE MIXED WASTE OF SOFIA MUNICIPALITY (TO DATE)



PROJECT "DESIGN AND CONSTRUCTION OF INSTALLATION FOR COGENERATION IN SOFIA WITH RECOVERY OF RDF – THIRD PHASE OF THE INTEGRATED SYSTEM FOR MUNICIPAL WASTE MANAGEMENT OF SOFIA MUNICIPALITY"



Purpose of the project:

- ✓ reduction of landfilled waste;
- ✓ energetic recovery of the RDF fraction produced in the MBT plant;
- ✓ ensure the completion and sustainability of the household waste management on the territory of Sofia Municipality.

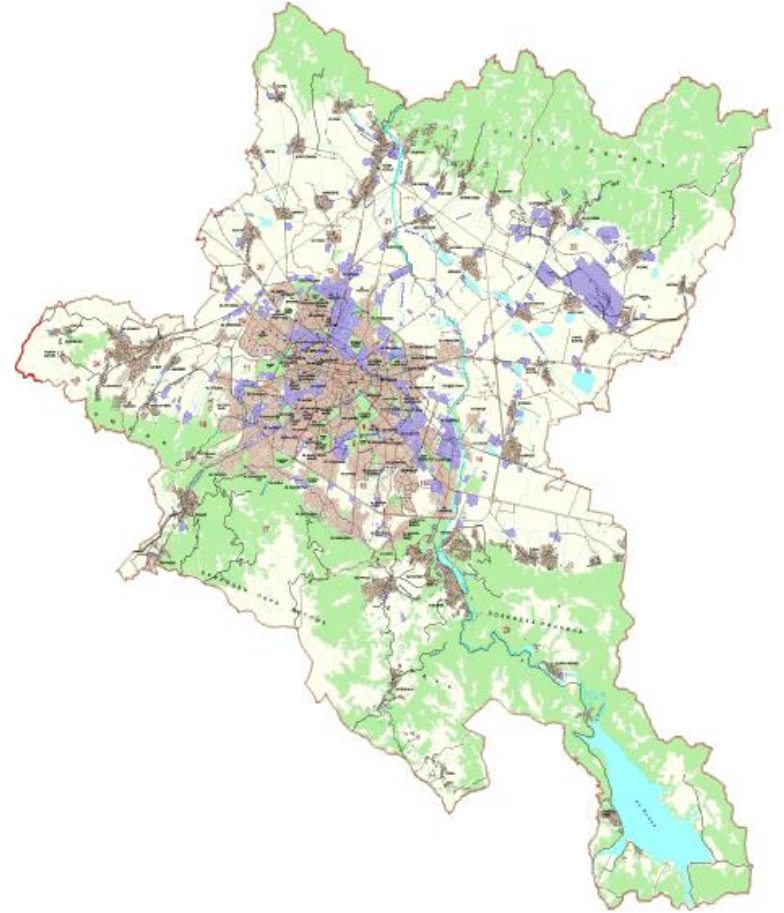
Benefits of the project:

- ✓ Energetic recovery of the RDF fraction, which will provide:
 - heat power for 40,000 households;
 - Electricity for 30,000 households.
- ✓ Reducing emissions by 9.6%;
- ✓ Diversification of the fuel resources;
- ✓ Ensuring certain independence from the gas supplies;
- ✓ 6% reduction in the price of heating under the today's conditions;
- ✓ Increasing energy efficiency in production;
- ✓ Reduction of production costs in the company's activities.

PROJECT FOR PELLETS PRODUCTION



- ✓ Utilization of bio-mass of the municipal forest fund;
- ✓ Energy efficiency in public municipal buildings;
- ✓ Production of wood "pellets" grade A1, wood chips and mulch;
- ✓ Capacity - 4 094 tons/year or 1 930 kg./ hour



THANK YOU!