

SORTING PLANT TYCHY.



## AUTOMATED MUNICIPAL WASTE PROCESSING SYSTEM

SOLUTION FOR MEDIUM-SIZED CITIES AND REGIONS.

**CUSTOMER:**  
Master-Waste and Energia Sp. z o.o., Poland

**LEAD TIME:**  
2012 - 2014

**INVESTOR/USER:**  
Master-Waste and Energia Sp. z o.o., Poland

**THROUGHPUT:**  
SORTING PLANT: 78,000 Mg/year, >22 Mg/h

**SCOPE OF WORK:**  
Technological design, production, completion, delivery, installation, start-up, training, servicing, post-implementation assistance.

### TYPE OF SYSTEM:

A multifunctional, fully automated system for sorting mixed and selective municipal waste from various collection systems with the automatic separation of 11 raw material fractions at a level of >80% of their content in the waste stream provided onto the line.



17/10 100 H0 DD



## AUTOMATED MUNICIPAL WASTE PROCESSING SYSTEM

LOCATION: TYCHY, POLAND

### CHARACTERISTICS OF THE SYSTEM

#### AIM OF THE PROJECT:

The basic task of the project entitled "Construction of the Inter-Commune Municipal Waste Management Plant in Tychy" was to reduce the amount of waste directed to the landfill site as a result of the separation of the biodegradable fraction and the recovery of as many secondary raw materials (SRMs) for recycling as possible and the maximum use of the energy fraction for the production of the RDF alternative fuel.

#### BASIC FRACTIONS

To ensure the fulfilment of the main technological objective of the system, i.e. ensuring the maximum possible levels of SRM recovery, devices

which allow for separating the following fractions from the stream of mixed municipal waste have been used:

- Raw fractions at 80% of their content in the stream of waste fed onto the line in the area of optical separator operation, ferrous and nonferrous metals, their automatic pressing and baling.
- Fraction intended for alternative fuel production and its processing (fragmenting) to obtain alternative fuel.
- Biodegradable fraction (0-60 mm) transferred for biostabilization.



Sutco® RecyclingTechnik GmbH  
Britanniahütte 14  
51469 Bergisch Gladbach, Germany  
Phone +49 (0) 2202 20 05 01  
E-Mail info@sutco.de  
Web www.sutco.de



Sutco® Polska  
Spółka z o.o.  
ul. Hutnicza 10, 40-241 Katowice, Poland  
Phone +48 (0) 32 7303 80 0  
E-Mail sutco@sutco.pl  
Web www.sutco.pl

SORTING PLANT FOR INTER-COMMUNE  
COMPREHENSIVE WASTE





## TECHNOLOGICAL PROCESS

The 60-340 mm raw material fraction which is of vital importance for recovery, is directed to the area of the plastic optical sorter.

The positively separated fraction of mixed plastics is fed to a ballistic separator with the option of sieving through a sieve below 30 mm, where plastics will be divided into the light flat fraction (2D) and the heavy rolling fraction (3D) and the sifted out pollutant fraction < 30 mm. The light fraction of plastics separated on the ballistic separator is directed to the optical sorter for plastic films and next, over a system of conveyors, to the waste sorting cabin for further cleaning.

The heavy fraction of plastics is directed, over a system of double-track conveyors, first, to the optical sorter for PET plastics where PET materials are positively separated which are then fed into the sorting cabin where they are further cleaned or sorted according to their colours.

The further part of the stream is directed to the PE/PP optical sorter, where the positively separated PE/PP raw material fraction is further cleaned in the sorting cabin. The negatively separated fraction is transported from under the PE/PP sorter to the next Tetra

Pack optical sorter and is then manually cleaned at the sorting cabin.

Attention should be paid to the fact that the described system of optical sorters, i.e. PET, PE/PP and Tetra Pack operates in a system of double track conveyors, the so-called track sorting. As a result, the negative fraction is returned and further cleaned on the second track of the conveyor system, entering the area of the sorters described above once again, where it can be cleaned or where the sorting parameters can be changed to separate, for example, the pre-set PED colour.

The further part of the 60-340 fraction which was not separated by the optical sorter for plastics is directed to the optical sorter for paper and cardboard after the prior separation of ferrous metals. The positively separated fraction of paper and cardboard is further cleaned in the paper cleaning cabin. After paper is separated, the stream of waste is directed to the sorter of non-ferrous metals.

After the separation of plastics, metals and paper, the remaining stream of waste is directed to the optical sorter for RDF fuel components.



*"Possibility of further expansion, modernization and installation of additional equipment."*

## ADVANTAGES OF TECHNOLOGICAL SOLUTIONS USED

- ▶ **Multifunctionality:** possibility of sorting municipal waste in various collection systems.
- ▶ **Modernity and reliability:** the best available technological and technical solutions that were tested on multiple occasions (in accordance with BAT principles).
- ▶ **Recovery** of the maximum quantity of secondary raw materials and the separation of high-caloric fractions as a component for RDF production.
- ▶ **High availability** of the system resulting from the quality of machines and devices used and the automation of the employed solutions - only inspection and further cleaning in the sorting cabin are performed manually.
- ▶ **Individual design** of the technological system based on the existing investment and location conditions.
- ▶ **Variability:** Possibility of further expansion, modernization and installation of additional equipment.
- ▶ **Multiple options for segregation:** possibility of optimization and adaptation of the segregation process to ongoing needs.
- ▶ **Possibility of performing positive and negative segregation** to maximize raw material recovery levels.
- ▶ **High level of automation** involving the automatic separation of homogeneous types of material fractions including plastics, paper, ferrous and non-ferrous metals.
- ▶ **Automatic systems** feeding waste for pressing.
- ▶ **Automatic systems** for feeding the fine, high-caloric and ballast fractions to the container loading station.

