# Valuable plastics separated cleanly

***M-U-T Maschinen Umwelttechnik Transportanlagen GmbH, Stockerau/Austria, has planned and built a sorting plant for plastic waste for an international customer. The plant started its trial operation at the beginning of September.***

Plastic waste is a valuable raw material, but in the domestic sector it is difficult to separate due to its smallness and diversity. The project comprised the installation of a mechanical plant for the automatic sorting of separately collected household plastic waste. The waste is to be separated into predefined 15 individual fractions. Among the 15 separated fractions, seven are defined as recyclable fractions, which should have a degree of purity related to the input waste of at least 90%.

**Picture-1: Input-Material**

Part of the sorted waste fractions is pressed into cuboid bales (LDPE, HDPE, PP, PS, PET, plastic-3D , 2D-rest, NE ). These are transported away for further recycling or recovery. The other part is collected loose in containers (FE, fines) or in press containers and compacted (3D rest).

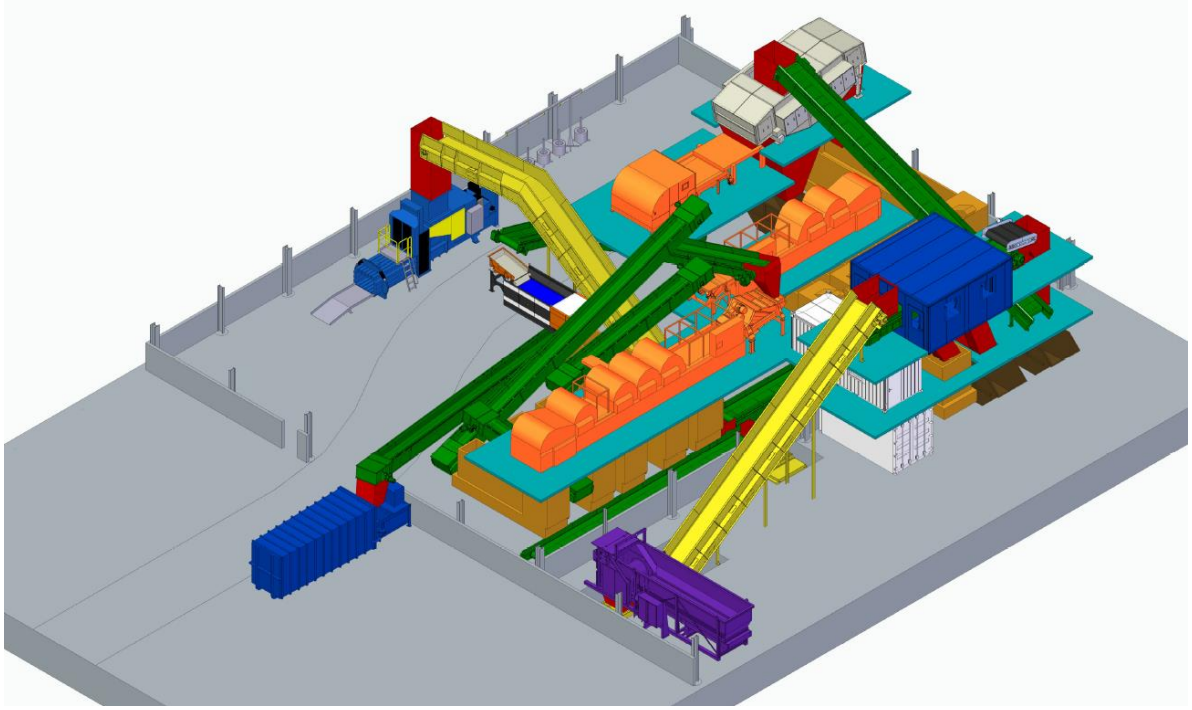
The key technical data are: Waste input: 5t/hour (15,000t/year), working time: 2 shifts of 7.5 hours each (approx. 3,000 hrs/year), daily capacity: 75t/day.

The sorting plant consists of individual sorting machines and various conveyor belts that transport the waste fractions between the respective sorting machines. The conveyors are sliding belt or chain belt conveyors.

The recyclable fractions separated by the individual sorting machines are collected in discharge boxes below the respective sorting machines. After reaching a predefined filling level, which is determined by means of sensor measurement, the respective recyclables are loaded onto two conveyor belts running at right angles to the boxes by means of a mechanical push floor in the discharge boxes and fed to the baling press, which presses the recyclables into cuboid bales and wraps them with wire. The finished bales are staged by forklift or wheel loader for removal outside the building. The unpressed fractions (impurity big, FE) are collected in roll-off containers and, when full, transported away by wheel loader or truck. The fractions 3D-rest and fines < 5 cm are collected and compacted in a container compactor before being transported away for further disposal.

The sorting plant includes an electrical control system that regulates the individual machines and the emptying of the discharge boxes. For this purpose, a separate control concept including PID (Process Implementation Diagram) is created.

M-U-T accompanies the test run as well as the operation phase with a preventive maintenance after the construction in order to guarantee the functionality, reliability, safety and quality of the sorting plant.



**Picture-2: Three-dimensional view of the sorting plant**