**Hungarian Southeast Great Plain region makes giant leap into recycling with an advanced sorting plant**

New system, which is equipped with 10 AUTOSORT units plus one X-TRACT unit,

enables Békéscsaba to process 120,000 tonnes of MSW waste a year

Settlements in the South-East region of Hungary, which previously sent all their municipal solid waste (MSW) to landfill, now have a state-of-the-art MSW sorting system near Békéscsaba that can process up to 120,000 tonnes of waste per year.

The plant, which is one of the most advanced of its kind in central Europe, thanks to its TOMRA sensor-based sorting technology, was commissioned by the consortium of DAREH-Ép and has been installed following a €15million EU investment.

The plant is designed to help Hungary meet recycling targets set by the EU, which require its members to recycle 50% of household and similar waste by 2020. Finalised in the summer of 2015, the plant had a highly successful, initial six-month period of operation and will soon be taken over by a new contractor.

It is designed to serve 86 settlements, comprising around 150,000 households, and was established near Békéscsaba on land belonging to the Municipal Association of the South-Eastern Great Plain Regional Waste Management System, which is managing the huge environmental investment in Hungary.

The MSW treatment plant comprises ten AUTOSORT sensor-based sorting units, which detect and recover valuable materials including polymers like HDPE, LDPE, PP, and clear and coloured PET and PE-film, plus mixed paper and beverage cartons. Furthermore, TOMRA´s optical sorting units are used to clean the organic fraction from plastics and for the production of a high quality substitute fuel (RDF).

During the waste treatment process, the large part of the fine fraction, including the organic fraction, is separated from the mainstream material. Following that, the organic fraction is cleaned separately from non-organic items like plastics, inert material and metals. The organic material is biologically stabilised, thus reducing the amount of waste sent to landfill.

Fewer than 20 percent of recyclables like PET, PP, PE, paper and metals, that are larger than 80 mm, are sent to landfill. After the waste has passed through a manual quality control system, the purity of each sorted recyclable exceeds 95 percent.

TOMRA´s AUTOSORT units are powered by ground-breaking and patented FLYING BEAM® technology, which enables them to provide *continuous calibration.* This means **substantially less downtime** and **greater output stability** compared to nearest competitors.

The AUTOSORT units also benefit from DUOLINE technology, which leads to **higher performance** and **low energy consumption,** confirming that it is indeed possible to protect environmental resources while **reducing operating costs**.

Furthermore, the **flexible** and universal **modular** system can easily be integrated into sorting plants, and meets a wide variety of sorting needs including single stream, packaging, paper, and household waste.

The organic fraction is cleaned from inert by an X-TRACT unit – a waste sorting system that uses the most advanced sensors on the market. Combined with its high production capacity and short amortisation period, these sensors make the unit the most advanced and profitable product available.

Thanks to its X-ray technology, the system is able to identify materials regardless of their surface and separate substances according to atomic density. Its X-ray camera has a 1.6 mm resolution, allowing it to detect and separate extremely small fractions of inert materials including glass and stones. The result is fast, efficient production of a highly pure, organic fraction, over 90 percent free of inert materials.

The plant operates in the following way: At the beginning of the sorting line there are two parallel lines, each with bag opener, drum screen, magnets, optical sorter for polymers/ beverage cartons and eddy current system for aluminium. One of the lines has an additional shredder for bulky items for the screen oversize fraction (> 320 mm).

The first step in the waste treatment line is feeding the bag opener. After the bags have been opened, the two waste streams go to the trommel (drum screen). The screen split up the input material into three grain sizes: <80 mm; 80-320 mm; >320 mm.

The main stream, which is the most relevant for the sorting of recyclables, is 80-320 mm. The fraction <80 mm, which has a very high organic content, after removing the inerts with X-ray sensor based sorter machine is biologically stabilised during several treatment steps; while the >320 mm fraction is stored and shredded regularly.

After the polymers and aluminium have been separated from the 80-320 mm fraction, the two remaining streams converge. The 3D (heavy and rolling) and 2D (light and flat) separation of the sorted polymer and beverage cartons fraction then takes place and from these two streams PET, PP, PE, PE-film and beverage cartons are sorted out.

The mixed paper is sorted from the remaining stream after the polymer and aluminium separation. After this, the rest of the fraction goes to the RDF sorter, which produces a high quality alternative fuel. Then the residue of the fraction goes to the adjacent landfill.

The <20 mm fraction of the inert material is landfilled and all sorted recyclables e.g. polymers and paper go through a quality control process where any remaining impurities are removed. The sorted recyclables, such as PET, PE, PE-film, PP, beverage cartons, mixed paper, ferrous and nonferrous metals, are sold to recycling companies for further processing and have been used, for example, to re-granulate sorted plastic.

 Laszlo Szekely, Business Development Engineer at TOMRA, said: “TOMRA Sorting Recycling provides more than just a machine off the shelf: our expert engineers in the field of recycling understand the complex nature of processing raw waste and metal material, and we work closely with the client to provide the right solution.”

“Thanks to the sorting plant, the whole region has made a giant leap from having to send all of its MSW to landfill, to being able to process up to 120,000 tonnes per year of MSW material in a state-of-the-art-system. This really is a huge achievement for Hungary and especially for the South-Eastern Great Plain region.”

TOMRA Sorting Recycling designs and manufactures sensor-based sorting technologies for the global recycling and waste management industry and more than 4,400 of its systems have been installed in 50 countries worldwide.

Responsible for developing the world’s first high capacity near infrared sensor for waste sorting applications, TOMRA Sorting Recycling remains an industry pioneer with a dedication to extracting high purity fractions from waste streams that maximise both yield and profits.

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