



## **Raw materials available here!**

> Magnet and sensor sorting for recovering secondary raw materials.



# We find what you're looking for!

## **Thoroughly sorting waste pays off more than ever.**

The hunger for raw materials remains unabated worldwide – especially in the emerging countries of China and India. At the same time, available resources are becoming ever more scarce. This results in ever-increasing raw materials prices.

## **Municipal waste – the cheapest source of raw materials in the industrialised countries.**

Anyone looking for low-price alternatives nowadays cannot afford to ignore municipal wastes. After all, they have become the industrialised countries' sources of raw materials. They provide a quickly accessible source of valuable materials mostly in forms suitable for processing, including, for example, iron, copper, aluminium, glass, paper and plastics. And in the event that their recovery is not feasible from an economic or technical point of view, they can still be used as a source of residue-derived fuel RDF – as a CO<sub>2</sub>-neutral alternative to fossil fuels.

Success in utilising innovative sorting technologies to recover the valuable materials hidden in refuse brings ecological and economic leadership.

## **STEINERT – the world leader in efficient sorting for more than 100 years.**

How high is the recovery of valuable materials? How pure are the separated materials? What are the machines' availability? And how easy are the machines to maintain? STEINERT has been providing the answers to all of these questions worldwide for many years, and is constantly developing new solutions, because we offer versatile technologies for the entire sorting process. Our range starts with the classic magnetic separators, which have proven themselves over many years, and extends to innovative sensor sorting such as the Induction Sorting System ISS<sup>®</sup>, the Colour Sorting System FSS<sup>®</sup> or the X-ray Sorting System XSS<sup>®</sup>. Incidentally, no other supplier in the global waste management industry has more metal separators in operation than STEINERT. Our experience is incomparable worldwide expressed in each of our solutions, and you can also profit from it.

Established in Cologne as a family company, we now have around 150 employees, are active globally, sometimes via subsidiaries, joint ventures, licensees or sales cooperations, in Europe, Australia, Brazil, China, Japan and the USA. Excellent market knowledge, an innovative spirit, intensive customer relations, worldwide service and, certainly not least, the employees' flexibility when faced with new challenges are the foundations of our company's success.

A perfect precondition, in fact, for getting the latest and best out for you. After all, it pays to take a closer look at the sorting process, to thoroughly exploit previously unused potentials, and so to achieve the highest possible value added and profit.



# We get the latest and best out for you!

## Valuable materials are not all the same.

It is not just the throughput alone that determines the efficiency of treatment – it is also mostly the income from sales that can be achieved. And this is exactly where the big differences crop up, depending on whether metals, plastics or non-ferrous metals are involved, and whether you utilise simple or accurate sorting technologies.

### Up to EUR 100/t for recovered iron.

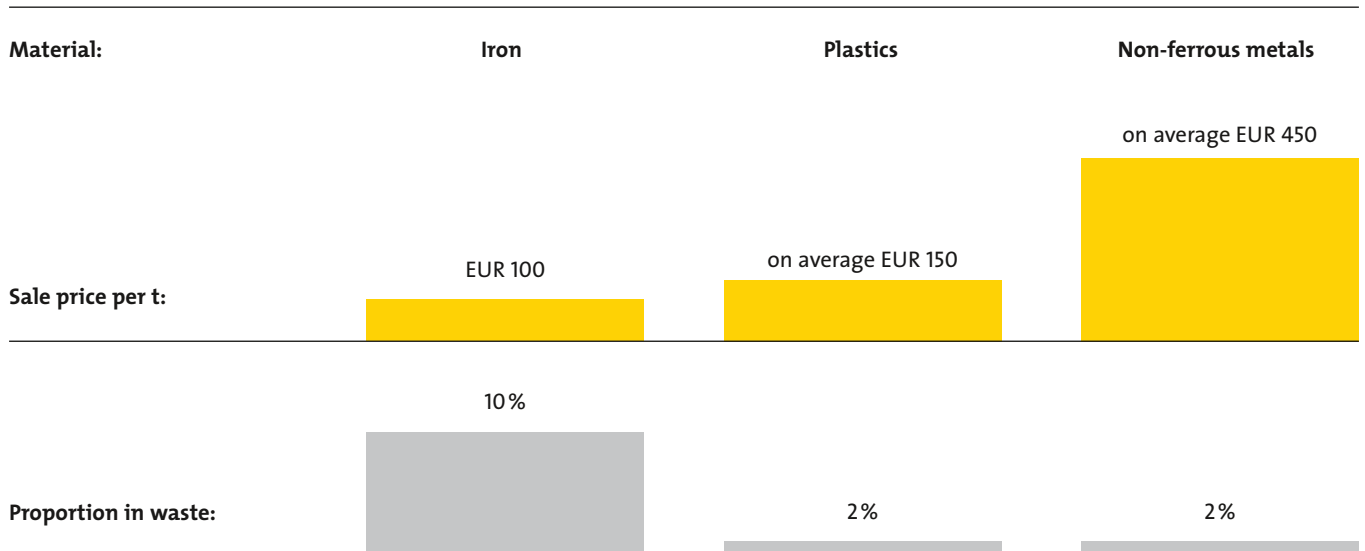
The iron component in waste can be up to 10 per cent. At prices of EUR 80-100/t, sorting pays. And our overband magnetic separators can take care of it. No matter whether air-cooled or oil-filled, whether permanently or electrically operated – they are the perfect solution when it comes to recovering iron, such as from cans.

### Up to EUR 500/t for recovered plastics.

Thanks to innovative near-infrared technologies, separating plastics from wastes is more profitable than ever before. Here too, depending on quality, the sales proceeds per ton can be EUR 100-500/t. All the better, then, that STEINERT can also offer you a high-efficiency solution in this area.

### Up to EUR 800/t for recovered non-ferrous metals.

Even today, there is a widespread belief that “It’s not worth getting a sorting solution for an aluminium component of only 1 to 5 per cent.” But it is certainly not true when you are talking about recovering non-ferrous metals. This is because the valuable components it contains are worth at least as much as iron, and normally many times more. The reason is that you realise an average sale price of EUR 800/t for non-ferrous metals. The importance of this fact is still underestimated in many places. High time then, to strike out on new paths with eddy current separators from STEINERT. After all, they offer exactly what is essential for recovery: high yields and high purity, and all thanks to their innovative eccentric pole system, more than 2,000 examples of which are already in use worldwide.



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**A wide range of valuable materials  
needs a wide range of solutions!**

# With us, you'll get them all!

## STEINERT – efficient technologies for maximum added value.

Today, STEINERT offers a wide spectrum of separation solutions – a range unequalled around the globe. And the decisive factor is that this range encompasses perfectly tuned technologies capable of separating materials that previously could only be inadequately from waste or not at all. Because exactly here lies the as-yet-untapped potential for profit.

### A typical sorting process for domestic refuse and its tributaries essentially consists of the following steps:

#### Shredding, sieving, classification.

In order to guarantee effective sorting, composites of different materials must first be broken up, collecting sacks torn open and the waste separated according to grain size classes (frequently 60, 120 and 250 mm). Coarse, contaminant materials are frequently removed by hand at this point in the process. The sorting of the fine-grain component should on no account be underestimated, as it conceals substantial valuable raw material components.

#### Recovery of iron.

STEINERT overband magnetic separators are the perfect solution when it comes to recovering the iron from refuse. Thanks to their powerful and long magnetic field, they ensure tremendous sorting power, long dwell time and an adequate working distance for large material flows. Arranged longitudinally in the belt discharge, they also make the work easier!

#### Recovery of non-ferrous metals.

If you are going to recover valuable materials, then get them all! That is especially true of the valuable non-ferrous metals. In the first instance, we are talking about aluminium, in the form of cans, for example, or also small aluminium parts and composites with plastics. What is more, copper and other non-ferrous metals are also to be found there.

The problem is that many places still separate by hand. This results in cans being recovered – and nothing else! Around 50 per cent of the non-ferrous metals in the form of fine aluminium, blister packs and copper, for example, are lost.

The solution is the STEINERT NES non-ferrous metals separator with eccentric pole system. The eccentric pole system:

- prevents iron sticking to the drum shell and thus guarantees maximum reliability
- guarantees sorting success and offers convincing rates of recovery with up to 30 per cent better results

As a rule, at least one STEINERT NES non-ferrous metals separator is used for each grain size fraction. These separators are obtainable in three configurations for various grain sizes and sorting objectives, and with belt widths of up to 2.50 m.

It even pays to recover aluminium with grain sizes smaller than 5 mm. Volume throughputs of 40-80 m<sup>3</sup>/h per metre of belt width are possible. In view of the low bulk material weight of 0.05–0.25 t/m<sup>3</sup> the plants must, however, be designed to be large enough to accommodate such volumes. One way of dealing with this is to operate NES non-ferrous metals separators in parallel.

#### Recovery of additional secondary raw materials.

The creation of value from waste goes way beyond just separating metals. After all, STEINERT offers you sensor-based solutions such as the high-resolution Near-Infrared Sorting System for recovering and marketing drinks cartons, paper, plastic bottles or plastic packaging.

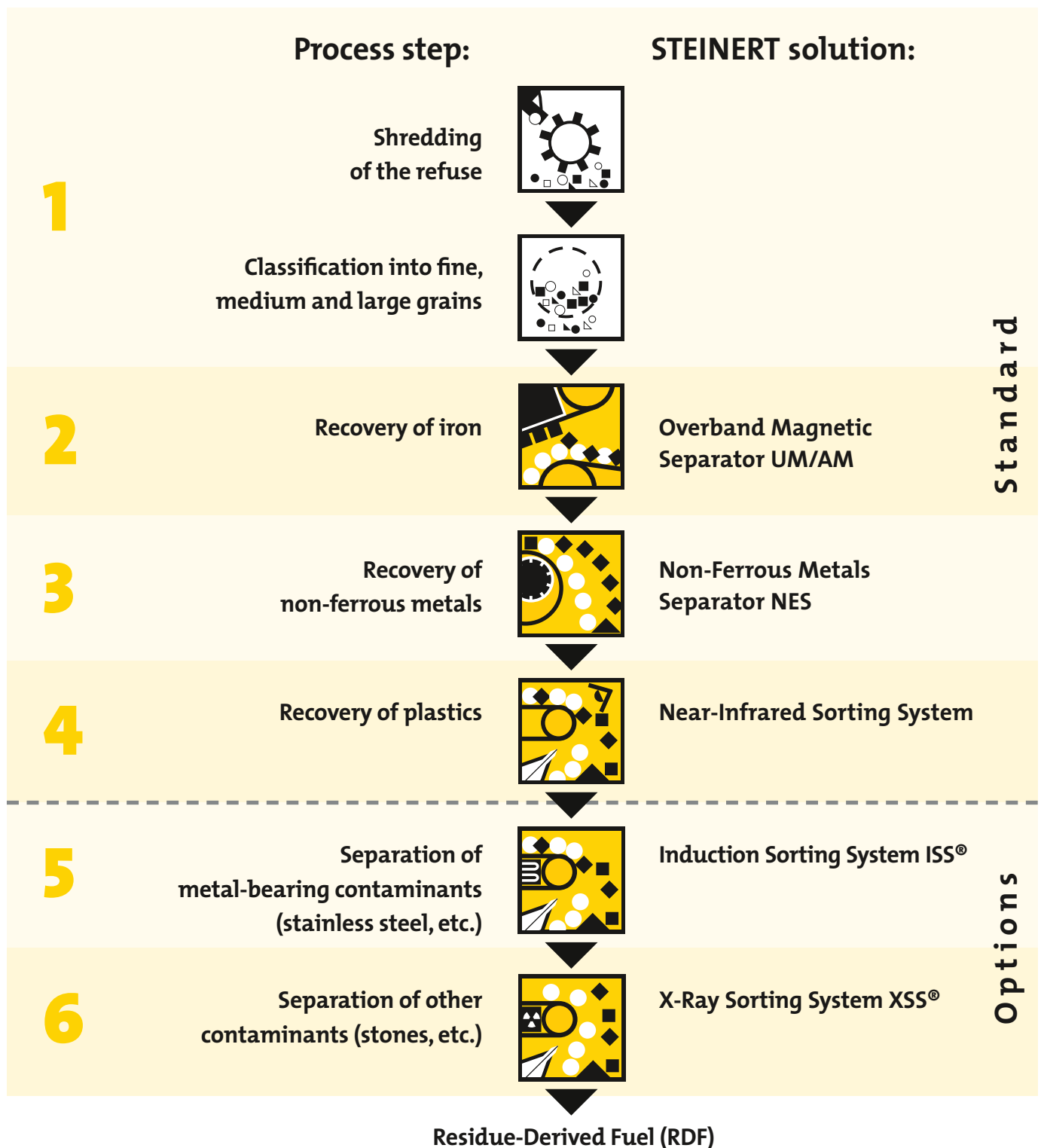
#### Separation of metals for the recovery of residue-derived fuel.

Residue-derived fuels have developed into an attractive, resource-conserving and CO<sub>2</sub>-neutral alternative to fossil fuels. They must, however, be free of metals and stones, in order to guarantee combustion without problems. This is guaranteed by the use of the ISS<sup>®</sup> Induction Sorting System and the XSS<sup>®</sup> X-ray Sorting System.

**To conclude, therefore, Steinert offers you solutions that maximise the creation of value added in every step of the process of waste sorting. We know every individual process and are thus also aware of the interdependencies required in order to determine an optimal design of the sorting plant.**



# From A to Z: the efficient sorting process.



The perfect basis for making decisions concerning your sorting process: the STEINERT technical centre.

If you are not sure which technical solution offers the best separation results for you, we will work together with you to find out – in the STEINERT technical centre. Here, we offer you access to an experimental area with practically every type of separation machine and experienced process technicians and engineers at your service. A small amount of the customer's own test material is frequently sufficient to determine feasibility. Depending on the application, it is often possible to decide on the design of an industrial-scale solution immediately. The end product of the test is always an informative log of the results – and for you, a good basis for your decisions.

Interested in getting more out? Then get in touch with us.

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