



Observatoire Europe-Afrique 2030

"Value Chain" sheet

Fact sheet n°8

## Waste sorting system

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# 1. Main Components of a Waste Sorting Center

Modern sorting centers are usually automated. Manual sorting only takes place at the end of the chain. However, in small centres, workers mostly resort to manual sorting.

## **Separation of waste by size and shape**

This first step begins with the deposit of the waste by a handling vehicle on the conveyor belt feeding the sorting line. The first machine that comes into play in the yard is the trommel. It is a large rotating cylinder with meshes that is designed to sort waste according to size.



At the end of the sorting process, the waste that is too small (usually less than 7 cm) passes through the meshes and is transferred to the rejected waste. The rest of the waste goes to the vibrating tables to be separated according to their shape.

Ballistics sorting then separates hollow bodies (bottles and vials) from flat bodies (paper, films, trays). In concrete terms, hollow bodies are dragged downwards and flat bodies upwards to each join a specific line.

## **Separation of waste by material**

Eddy current separators are used to separate aluminum. Then the "Overband", consisting of a powerful magnet, separates the ferrous metals.

Optical sorting machines sort plastic resins (PET, polypropylene) from paper and cardboard. These devices work on the principle of infrared spectrometry. The waste is ejected from the sorting line via a blast of compressed air and is directed to new conveyor belts to be grouped according to the main categories of materials. They are then compacted in the form of cubes, commonly known as "bales", which feed the recycling industries.

Other types of equipment are essential for waste sorting centres, such as the cabin for manual sorting.

## 2. Facility Cost Structure

### Waste Collection Equipment

Equipment	Estimated cost	
Large volume dumpster	from 300 to 7000 euros	
Waste container (polyethylene, steel)	€18 to €630 (less than 100l) €224 to €1,225 (100 to 1,000 l), €590 to €1,600 (more than 1,000l)	
Dump	800 to 2000 €	
Voluntary drop-off terminal	from 1000 to more than 8000 €	

### Waste sorting unit

Equipment	Price Estimate	
Trommel	Between €5000 and €10,000	
Eddy current separator	Approx. €20,000	
Optical Waste Sorting Machine	Up to over €20,000	
Compactor	From 3000 €	
Manual sorting booth	Between €15,000 and €50,000	

	Up to €200,000 for industrial use	
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### 3. Value added

(under preparation)

### 4. Sources of Information

<https://conseils.hellopro.fr/combien-coute-un-centre-de-tri-de-dechets-2765.html>

<https://conseils.hellopro.fr/quel-est-le-prix-d-une-benne-a-dechet-grand-volume-1562.html>

<https://conseils.hellopro.fr/quel-est-le-prix-d-un-conteneur-pour-dechet-1614.html>

<https://conseils.hellopro.fr/combien-coute-une-benne-basculante-1787.html>

<https://conseils.hellopro.fr/combien-coute-une-borne-d-apport-volontaire-2144.html>