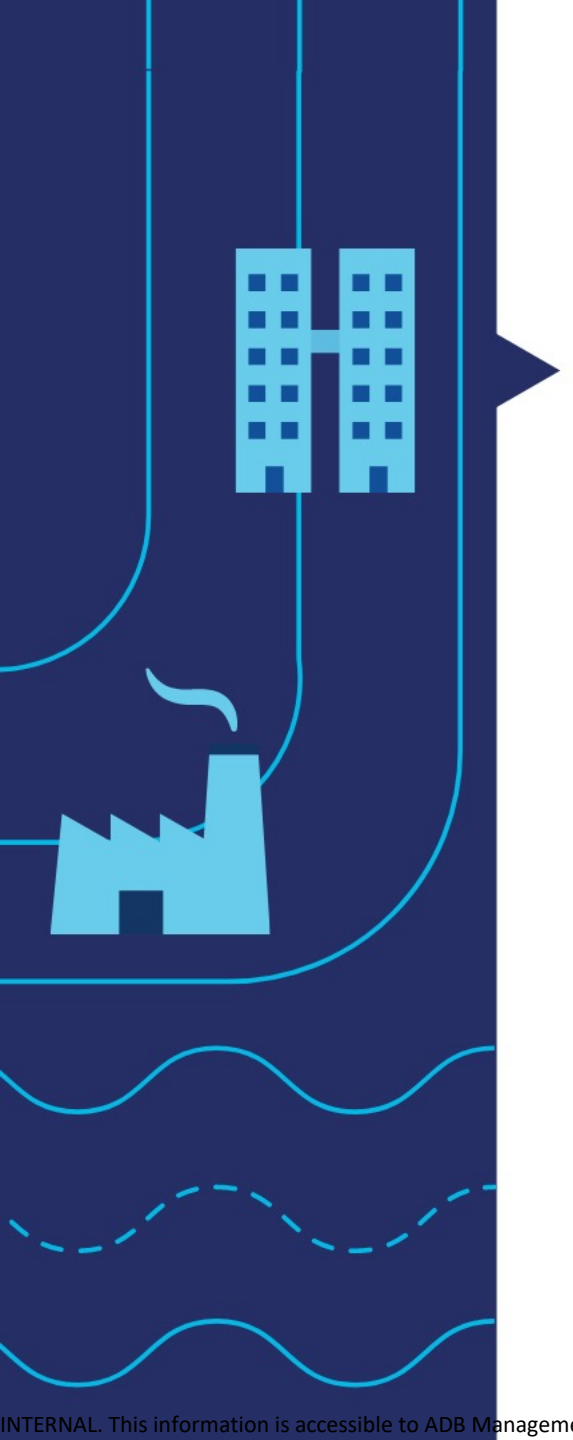
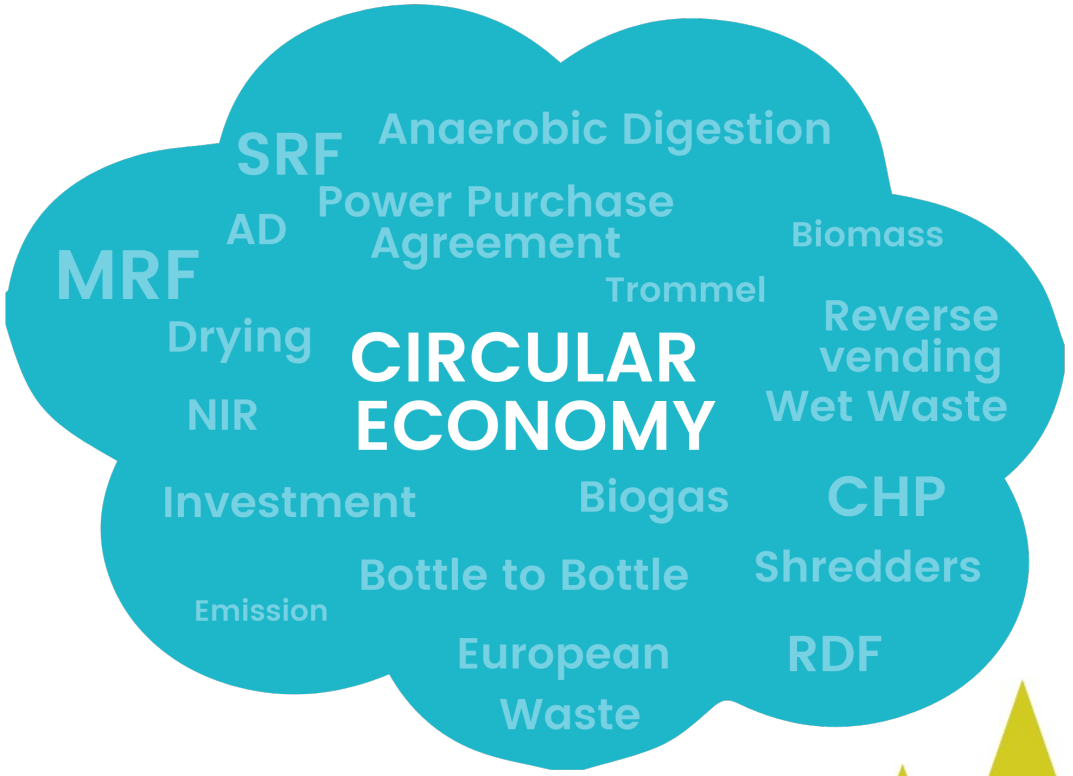


Waste Management and Recycling Technology Selection for Circular Economy in Developing Member Countries

Let's Go Shopping!

Waste and Waste Management Technology Have a Lot in Common

They Both Require a Lot of Sorting to find the Best Value!



WASTE NEEDS SORTING

Waste is a mixture of everything you throw away

Landfills and mass burn incinerators require very minimal sorting and represent the easiest form of waste management but only achieve the lowest levels of circularity

To recycle individual items they need to be sorted and separated from other materials

Source Segregation represents the highest level of sorting as it never allows the waste to mix in the first place but this requires the highest levels of public involvement, collection infrastructure and is the easiest process to lose public trust

The Majority of Waste Management and Recycling Technology Focusses on mixed waste sorting and separation

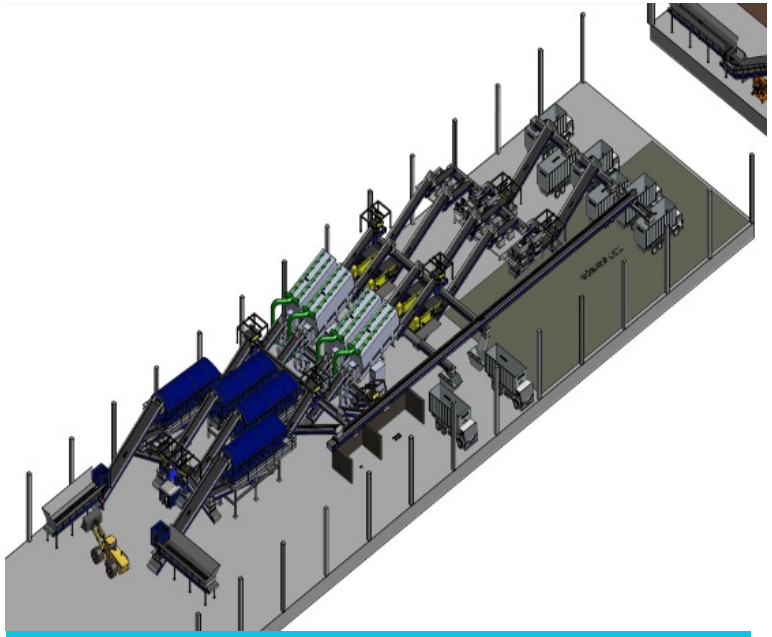
Low Range Technology – Manual Sorting

Informal Waste Collectors

Roadside Sorting

Mid Range Technology – Mechanical Sorting

Simple Picking Stations

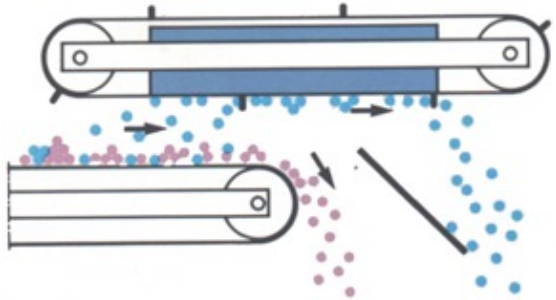


Full Materials Recovery Facilities (MRF)

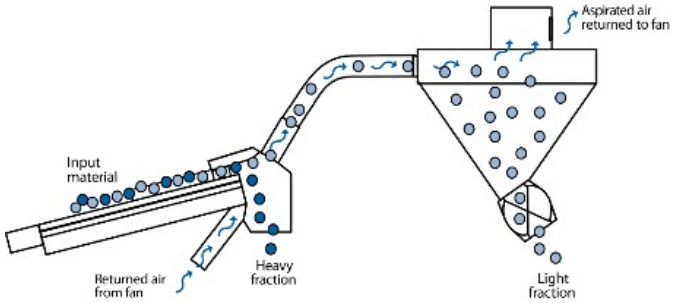
How does mechanical sorting work?

Size

2D/3D

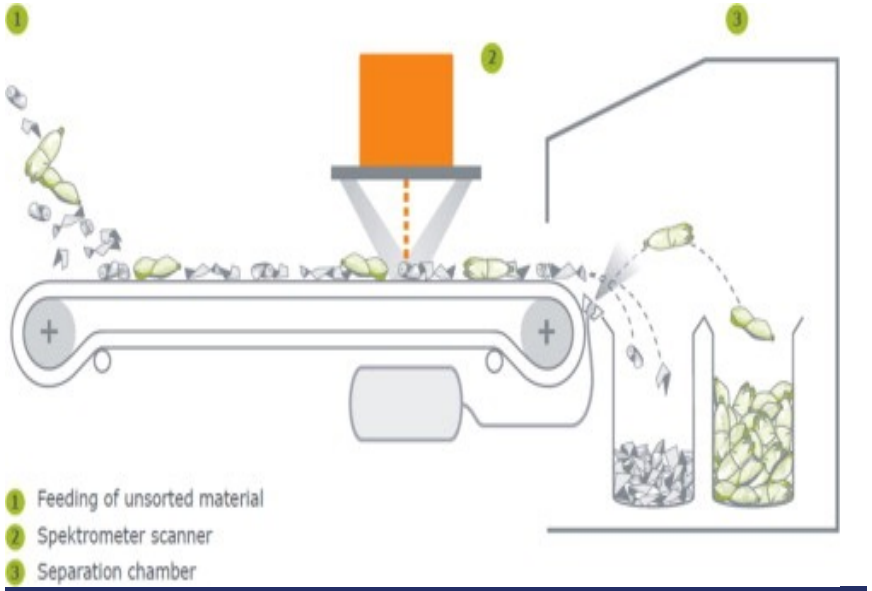


Magnetism



Density

High Range Technology – Digital Sorting



Near Infrared Sorting

Robotic Sorting

High Range Technology – Waste Avoidance

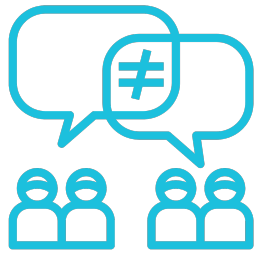
Reverse Vending Equipment
(Credit: TOMRA)

The Challenges of Operations and Maintenance

Initial cost is a barrier to implementation but the actual success of a system relies more heavily on the Operations and Maintenance. As we move up the technology spectrum the ability of the selected equipment to complete its task is increasingly dependent on:

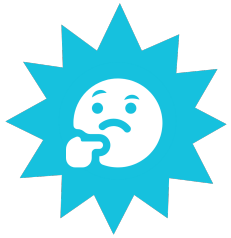
Value in the Waste Stream
Revenue Earning Recyclable Materials Removed Before Sorting

Well presented waste
Moisture Contamination

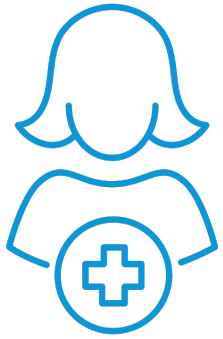


Effective Operations and Maintenance
Technical Support, Well Structure Maintenance, Skilled Operatives

An Enabling Environment
Policy, Legislation, Manufacturers Using Digital or Chemical Water Marks, Recycling Industry Off-takers



So what do we buy?



Human and Environmental Health

Provide safe, decent working environments for people in the waste and recycling industry

Promote collection of waste

Divert waste away from the environment

Recycling and Reuse

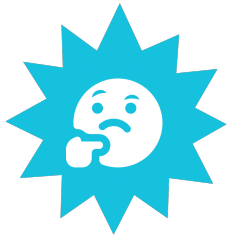
Divert waste away from end of life disposal solutions

Direct waste/recyclable materials back into the economy

Reduce the Occurrence of Waste

Prevent items becoming waste

Short circuit the transition from end of use to recycling avoiding



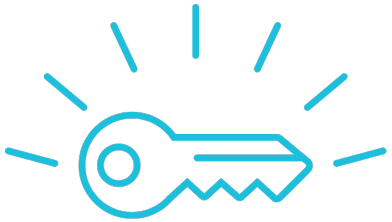
So what do we buy?

Waste Management and Recycling Systems are Modular

Systems and capabilities can be expanded over time. But time and cost can be saved by planning for that expansion during project inception.

Electrical Power Capacity

Space



Access

Location