

Materials Recovery Facilities & Materials End Destinations

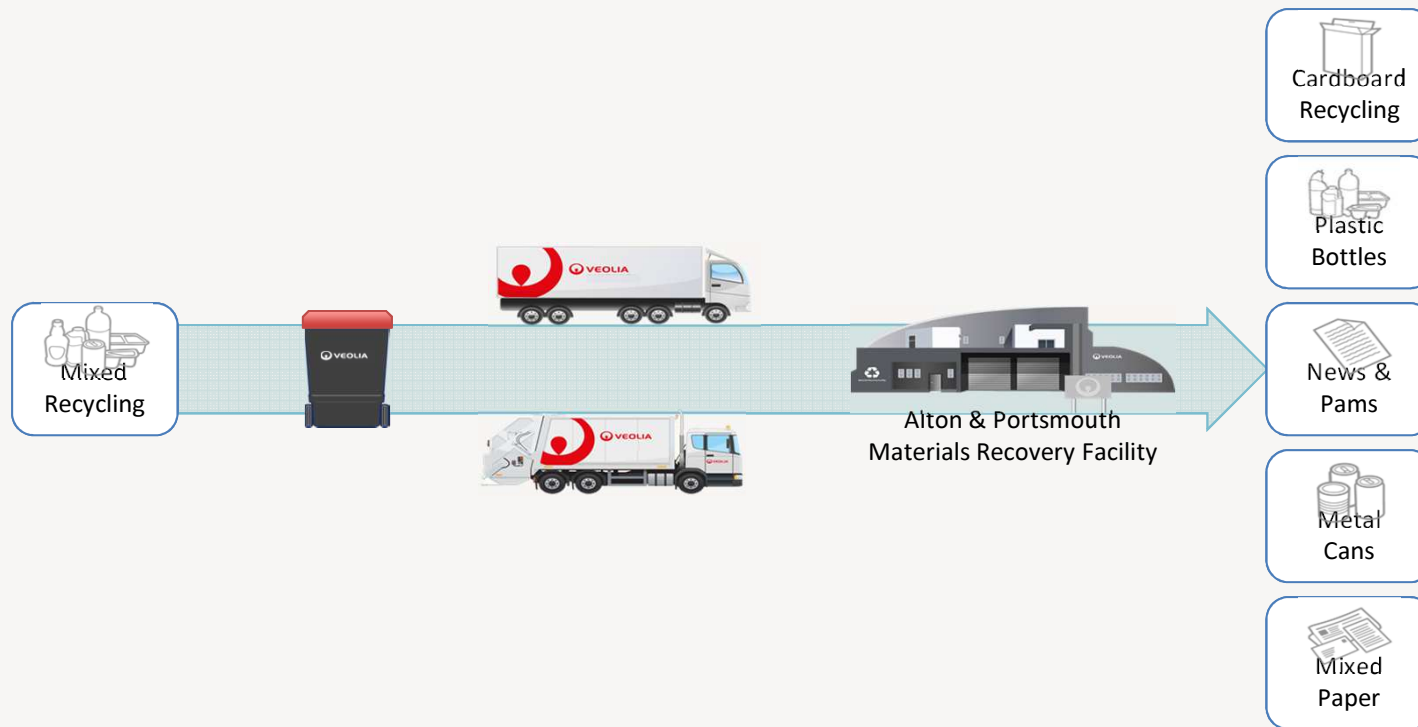
Hampshire's Materials Recovery Facilities



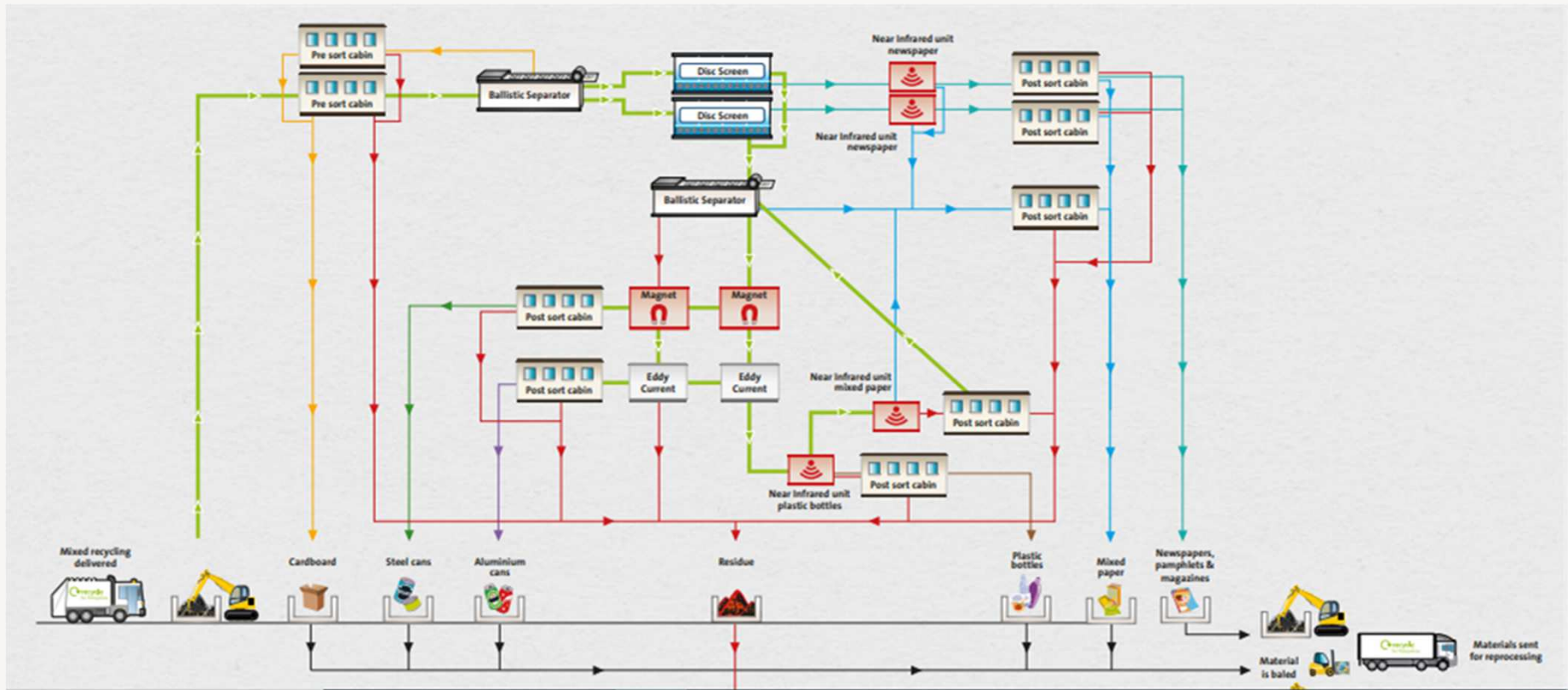
Both Alton &
Portsmouth MRFs
process a combined
total of

c100,000 tpa

From Household to MRF



The MRF Process



The 8 steps to Material Recovery

Step 1; The collected material is delivered to a Materials Recovery Facility (MRF) and tipped into the loading area.

Step 2; It is then fed onto loading conveyors by mechanical shovel. The purpose of using conveyors is to provide a controlled, constant flow of material to the system.

Step 3; The material is transferred onto an elevating conveyor, which in turn feeds the material to the pre-sort conveyors. The elevating conveyor operates at a faster speed to thin out the material depth for delivery to the pre-sort area.

Step 4; Once in the pre-sort area the non-recyclable material is manually picked out and discharged into the storage bays below.

Step 5; The mixed material flowing from the pre-sort area enters two trommel screens which then separate into three components: Containers and fine materials, Newspapers and magazines Card and some papers

The 8 steps to Material Recovery

Step 6; The materials are further processed using disc screens and conveyors. The MRFs are equipped with sophisticated automatic recognition and sorting of products. This system is used in three separate locations within each facility and works on an optical identification and separation using air jets.

Step 7; Following the automated process of separation, the product lines are monitored manually and any non-recyclable material is picked off and goes into a residual storage bay.

Step 8; A magnetic separator removes steel cans automatically and transfers them to a storage bunker. An eddy current-separator is used to extract the aluminium cans which are stored in another bunker.

These materials are separated in the process and sent for onward recycling to UK and export reprocessors:

- **Plastic Bottles**
- **Aluminium and ferrous metal cans**
- **Newspapers, pamphlets and magazines**
- **Mixed paper**
- **Cardboard**

Materials End Destinations

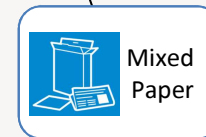
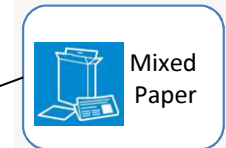
Material Type	Reprocessor, Destination
Plastic Bottles	Veolia, Dagenham UK
Aluminium Cans	Novelis/Alutrade, UK
Newspapers, pamphlets & magazines	Palm Paper, UK
Ferrous Cans	EMR, UK & Export
Mixed Paper	Export
Cardboard	Export
Glass	Export

Note: All end destinations are fully audited for compliance (HCC holds copies of all relevant documentation)

UK Materials Destinations



Export Materials Destinations



Reprocessing - Plastic Bottles



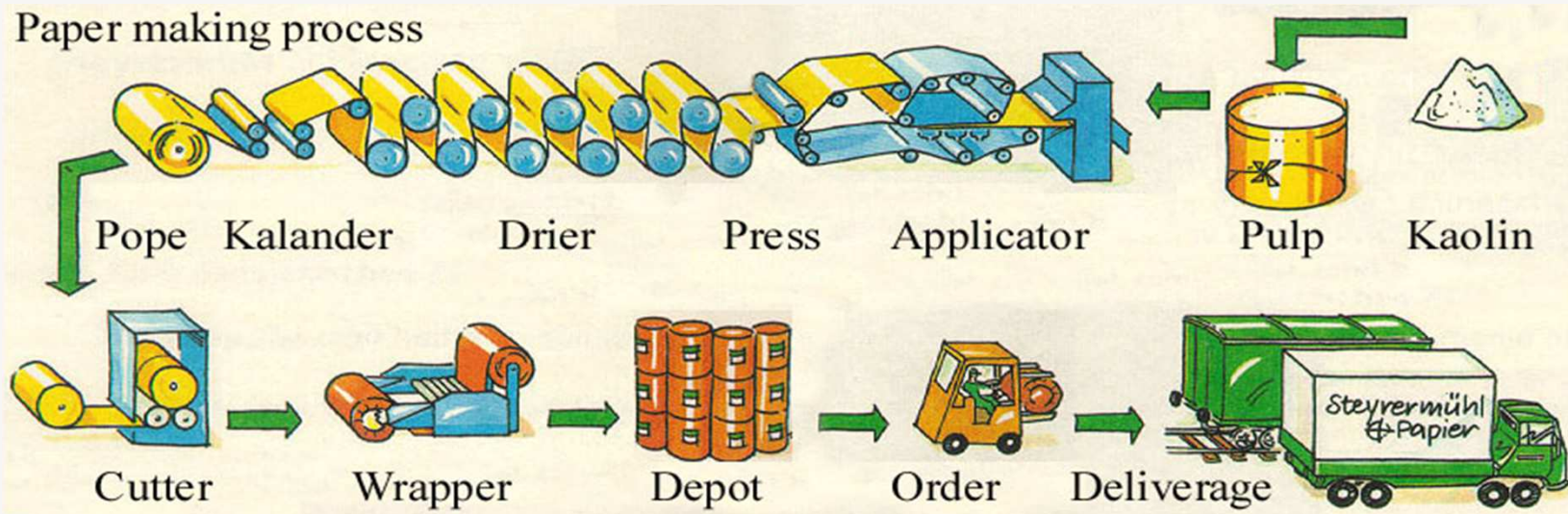
Recycled Plastic bottles become;

- Plastic bottles
- Film and Sheeting
- Traffic Cones
- Packing Materials
- Plastic Bags
- Kitchenware
- Clothing
- Carpets

10 Plastic bottles make a T-Shirt

[Plastic Bottles - Veolia Dagenham](#) *Click here*

Reprocessing - Paper



[UPM Paper Recycling](#) (Click for link)

Reprocessing - Paper



Recycled News & Pams becomes;

- Newspaper
- Building Insulation
- Egg Cartons
- Paperboard
- Cat litter
- Food packaging
- Paper

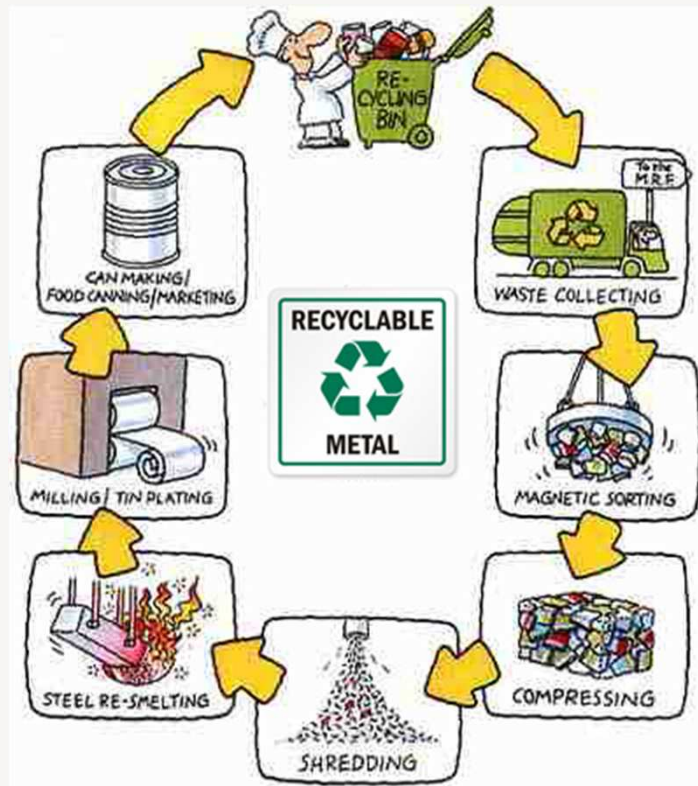
Recycled Mixed paper becomes;

- Toilet paper
- Napkins
- Paper towels
- Facial tissues
- Paper

Recycled Card becomes;

- Cardboard
- Installation
- Paperboard
- Paper bags

Reprocessing - Metal Cans



Recycled metal cans become;

- Car Parts
- Bike Parts
- Steel Drums
- New Cans
- Appliances
- Rebar
- Clothing
- Carpets

[Metal Cans Recycling \(Alutrade\)](#) - Click here

Export - Why?



- Limited UK Reprocessing Capacity
 - UPM Shotton 2nd Line closed
 - Aylesford Newsprint closure
- Better Pricing Achieved
 - Recyclable material a globally traded commodity
 - Advanced processing technology
 - Demand for material (consumer goods manufacturing)
- Quality Output
 - Highly regulated
 - Specification

Pots, Tubs & Trays (PTTs) & Markets



- As with all secondary materials, there has to be an end market and they must be **"recyclable"**
- Future government policy likely to require PTTs to be collected
- Not all PTTs are currently recyclable –only PP has a secure stable market
- Government proposals such as EPR, DRS, Tax etc. expected to make more products/packaging collectable and recyclable through better design & “recycled content” requirements
- PTT separation can be included in process/facility design to “futureproof”

China - Operation National Sword



- 2018 China bans the importation of OCC (Cardboard), mixed paper and Plastic wastes
 - Focus on China's own domestic market to promote recycling
 - A number of other Far Eastern market's (Vietnam; Malaysia etc.) have similarly either restricted or banned waste imports.
- End markets select material based on quality
 - Strict contamination limits (< 0.5%)
 - Moisture content within paper (fibre) materials
- Surplus material in the global markets
 - Supply and Demand
 - Seasonal impact (Christmas, Spring etc.)

HWRCs - Recyclables



Metal Recycling

22 grades sold from Hampshire to EMR



Cardboard

c 7,000tpa of Card is baled at the 2 MRFs and sent for reprocessing



Reuse Shops

26 Shops at the HWRCs in Hampshire



Recycled Wood

c 14,000tpa of wood is recycled from the HWRCs



HWRCs - Recyclables Challenges



Metal Recycling

Volatile markets

No consistent input



Cardboard

Public education - no polystyrene/packing material within cardboard

Mixed paper in kerbside bins



Reuse Shops

Volume of material

Social Value Creation

Missed Opportunity

Cost to transport



Wood

Growing UK recovery capacity

EA position statement (Haz)

Recycling good but costly



Looking Ahead

- Climate Change – implications of trading recyclables in a global market scenario
- Plastics
Single-use
Alternatives incl. biodegradable & compostable & bio-plastics
https://www.green-alliance.org.uk/resources/Plastic_promises.pdf
- Demand to increase recycling but there will always be a need for the disposal of the non-recyclable materials

Plastic promises
What the grocery sector is
really doing about packaging

green
alliance...

