

Solihull DOES

**SOLIHULL MBC
RECYCLING DESTINATION REGISTER 2022-2023**

Purpose of Note:	To provide information about the end destinations of the materials collected through the Kerbside Recycling Service and Bickenhill Household Waste Recycling Centre (HWRC) as part of Solihull MBC's commitment to the End Destination Charter. This information covers the period April 2022 to March 2023.
Date:	5 th December 2023

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1 Background

In 2022/23 Solihull residents re-used and recycled 29,783 tonnes of household waste¹, a decrease of 2,319 tonnes on the previous year (household waste only). This has resulted in less waste being disposed of, contributing to an estimated² 10,607 tonnes of carbon saving³. Furthermore, the diversion of waste from landfill to energy from waste (the generation of electricity and district heating) has prevented an additional 18,873- tonnes of carbon from being emitted^{4 5}.

2022/23 was the eighth full year that we collected recycling as a twin collection stream. Paper, card, plastic bottles, tubs, trays, tins, cans, and aerosols were collected mixed in a brown 240 litre bin, clear sacks or communal recycling bins and glass bottles and jars were collected separately in a 55-litre black recycling box.

Recycling and re-use of materials provide numerous benefits including reducing carbon emissions, both by saving energy in extraction and manufacturing processes and by avoiding the emission of powerful greenhouse gases that are emitted by landfilling biodegradable wastes. Recycling can also have other environmental benefits, including conserving natural resources and reducing other forms of pollution.

¹ Household waste is defined as waste from domestic properties.

² CO₂ tonnes equivalent.

³ <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>

⁴ CO₂ tonnes equivalent.

⁵ <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>

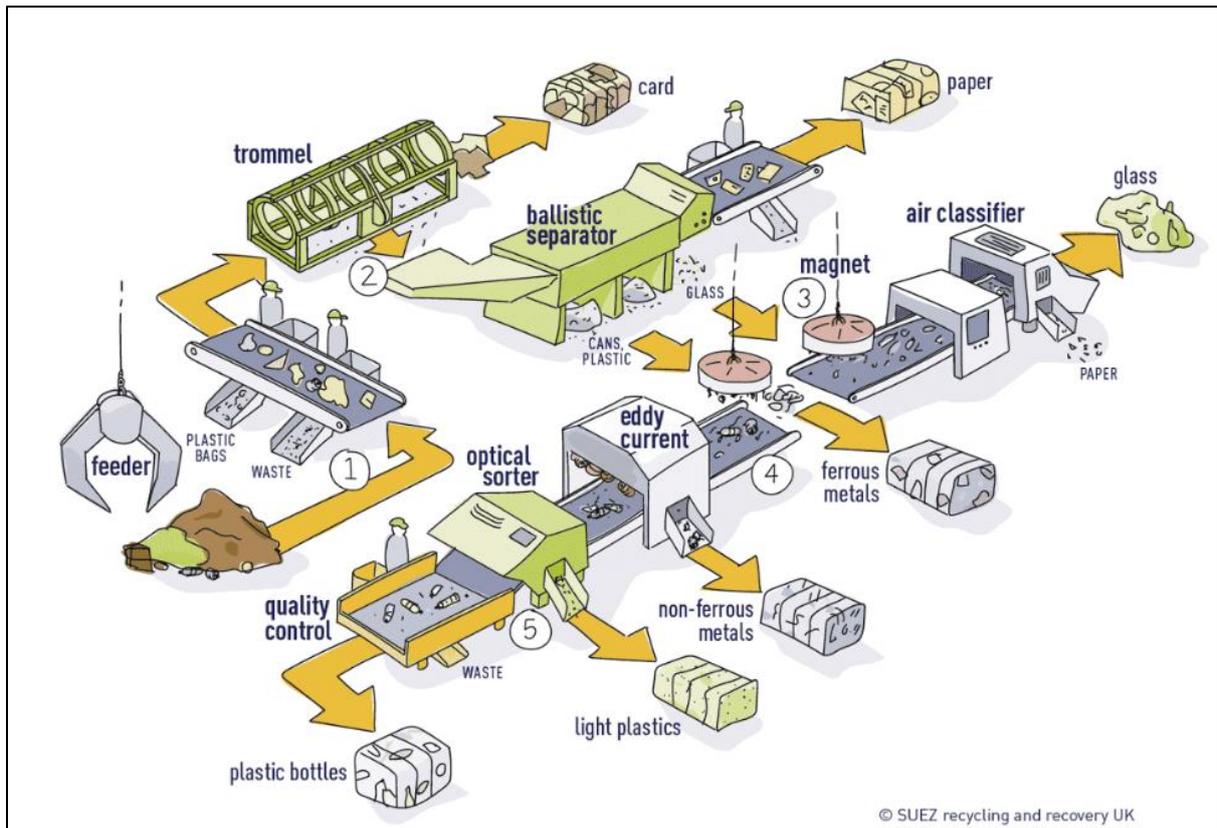
Solihull MBC aims to use UK based recycling contractors and to supply local markets – where practicable. However, this is not always possible due to the demands of the global economy and the location of re-processors and end markets. Often it is more economical to export materials overseas to where the demand lies. For example, the demand for re-used clothing is often greater in developing countries and Eastern Europe than in the UK.

All the materials listed below are classed as household waste, apart from plasterboard, hardcore, rubble and soils which are defined as commercial/industrial wastes (non-household).

2 What is a Materials Recycling Facility (MRF)?

A Material Recycling Facility (MRF) is a specialist facility where mixed recyclable materials that are collected from households are sorted into different types, e.g. plastics, paper, cardboard and metal. This is achieved using a mixture of manual and automated methods. When the materials have been sorted into their separate material streams they are baled and sold to reprocessors and manufacturers where they are used to create new products. In 2022/23 Solihull MBC used a MRF in Birmingham operated by Suez UK Ltd. A schematic and description of the process is shown on the following page.

A brief overview of a Materials Recycling Facility can be found [here](#).



[Image Suez](#)

1. Recycling from kerbside collections is tipped off in the reception hall.
2. The recycling then passes through a trommel screen and ballistic separator to separate different materials
3. Glass is passed under a magnet to remove any ferrous metals. An air classifier removes light paper.
4. Metals are removed using a magnet (ferrous) and eddy current separator for non-ferrous metal
5. An optical sorting unit separates out different types of plastic.



Recycling which is collected is taken to Bickenhill Household Waste Recycling Centre where it is deposited into bulking bays. There are two bays - one for glass and one for mixed recycling . The mixed recycling is transported by articulated lorry to the MRF.

The recycling arrives at the MRF and is deposited into the reception bay



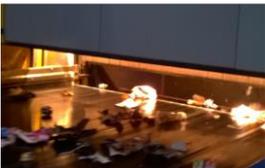
On the first conveyor an initial hand sort is carried out to remove any large recyclable items such as card and contamination (non-recyclable items) such as crisp packets and plastic bags.

Following this the material enters a trommel (a large rotating drum full of holes similar to large washing machine) where fine materials are separated out which are not recyclable.



The remaining recycling then leaves the trommel on a conveyor where the metallic items are removed. A series of Eddie Current Separators and electro-magnets are used to separate the ferrous and non-ferrous metals from the recycling.

After the metals have been removed the recycling passes over a vibrating table which separates the materials before they enter the air classifier on a high speed conveyor



The air classifier uses the different material properties (density and aerodynamic profiles) to separate materials by weight. In addition optical scanners are used to identify and separate different plastic types that are then separated with air knives/blowers. .

Once all of the individual materials have been separated they each go through a separate manual picking line for fine sorting.



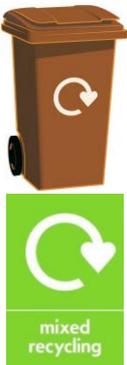
The separated materials are then dropped down a series of hoppers and onto conveyor belts which transport them to the individual material bays where they are stored prior to being sold on for reprocessing in specialist factories into new products

The facility used by Solihull MBC is unique in that Suez also operates a Solid Refuse Fuel (SRF) facility on the same site, and are able to direct contamination (material not suitable or accepted for recycling) into the SRF plant. This facility then turns the contamination into a fuel for use in the cement industry as a replacement fuel for coal.

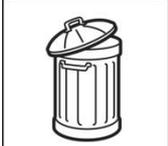


The following tables show the materials collected by Solihull MBC in 2022/23 through the Kerbside Recycling Service and accepted at Bickenhill Household Waste Recycling Centre (HWRC). The tables show the type of material, collection contractor, reprocessor and the end use of the material.

3 Kerbside Recycling Material End Destinations

Kerbside Recycling Collections 2022-2023			
Material	Collection Contractor	Reprocessor (Initial)	End Use
<p>Mixed Household Recycling – Paper, Card, Plastics and Cans</p> 	Veolia	Suez, Recycling & Recovery UK LTD, Birmingham	Materials are sorted into the separate material fractions via an automated process at a Materials Recycling Facility. The separate materials are then baled and sold on the open market for manufacture into new products across the world. Any material that is not suitable for recycling is used to manufacture Solid Recovered Fuel (SRF) which is used in the cement industry as a replacement for coal.
<p>Mixed Glass Bottles and Jars</p> 	Veolia	<p>Suez, Recycling & Recovery UK LTD, Birmingham</p> <p>URM (UK) Ltd, Knottingley, West Yorkshire</p> <p>Recresco Ltd, Ellesmere Port</p>	<p>Mixed glass bottles and jars are sent to MRF plant for sorting. They are then sent for reprocessing into new products across the UK</p> <p>Mixed glass bottles and jars collected in the black box are colour separated using innovative laser technology. It is then used to make a variety of end products including being re-melted into new glass products and is used as an aggregate, for example in road building in both the UK and abroad. Fine out more about the process</p>
	Veolia	JMP Wilcox, Bilston	Products sorted and graded. Some material is sold directly through shops for reuse across Europe and Dubai.
<p>Garden Waste</p> 	Veolia	Suez, Recycling & Recovery UK LTD, Warwickshire	Garden waste collected in the green wheelie bin is composted in windrows to produce compost which is sold through national retailers under different brands.

Kerbside Recycling Collections 2022-2023

Material	Collection Contractor	Reprocessor (Initial)	End Use
<p>Household Waste</p>   <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">household waste</div>	<p>Veolia</p>	<p>Coventry and Solihull Waste Disposal Company, Coventry</p> <p>FCC Environmental – Bubbenhall, Warwickshire</p>	<p>Household waste collected in the black bin, communal bins or purple sacks. It is not sent to landfill.</p> <p>Value is recovered from the waste as it is sent to the Energy from waste facility with heat being recovered to generate electricity and heat local buildings. For more information.</p> <p>Incinerator Bottom Ash (IBA) is a by-product from this process and predominately consists of glass, ash, metals and fines it makes up between 19 to 21% by weight of the waste left in your bin. This material is recycled into secondary aggregates. The IBA is taken to a plant and then processed by crushing, screening and separating to produce an aggregate suitable for use in the construction industry.</p> <p>The advantage of doing this is it replaces virgin aggregate i.e. reduces quarrying and has an environmental benefit.</p> <p>The metals within the IBA are separated from the ash and recovered for recycling, reprocessing into their separate fractions and then into new metal products.</p> <p>Air pollution control residue (APCR) is produced by the process to remove gases which are produced when waste is burnt. These are passed through a filter which contains lime. Lime is used to neutralise acidic gases and carbon is used to remove dioxins and heavy metals. The gases pass through a fine filter to capture any remaining particles before being released via the chimney stack.</p>

4 Bickenhill HWRC Material End Destinations

Bickenhill Household Waste Recycling Centre (HWRC) 2022-2023			
Material	Site Operator	Reprocessor (Initial)	End Use
<p>Cardboard</p>  <p>cardboard</p>	Veolia	Smurfit Kappa, Birmingham	Cardboard is directly recycled into brown paper for use in the packaging industry.
<p>Mixed Recycling</p>  <p>mixed recycling</p>	Veolia	Suez, Recycling & Recovery UK LTD, Birmingham	Materials are sorted into the separate material fractions via an automated process at a Materials Recycling Facility. The separate materials are then baled and sold on the open market for manufacture into new products across the world. Any material that is not suitable for recycling is used to manufacture Solid Recovered Fuel (SRF) which is used in the cement industry as a replacement for coal.
<p>Mixed Glass Bottles and Jars</p>  <p>mixed glass bottles & jars</p>	Veolia	URM (UK) Ltd, Knottingley, West Yorkshire Recresco, Ellesmere Port	Mixed glass bottles and jars collected in the black box are colour separated using innovative laser technology. It is then used to make a variety of end products including being re melted into new glass bottles and jars. Some of the material is unsuitable for re-melting into new glass products and is used as an aggregate, for example in road building in both the UK and abroad. Find out more about the process .
<p>Textiles and Footwear</p>  <p>mixed textiles & clothes</p>	Veolia	JMP Wilcox, Bilston	Products sorted and graded. Some material is sold directly through shops for reuse across Europe and Dubai.

Bickenhill Household Waste Recycling Centre (HWRC) 2022-2023

Material	Site Operator	Reprocessor (Initial)	End Use
Plasterboard  plasterboard	Veolia	Clewes Recycling Ltd, Rugby Kiely Bros. Ltd, Birmingham	Plasterboard is machine picked to remove residual non-hazardous waste. The paper backing is removed to make new fibre-based material and gypsum ground down to be added to new gypsum to make new plasterboard.
Scrap Metal  scrap metal	Veolia	European Metal Recycling Ltd, Kingsbury European Metal Recycling Ltd, Birmingham	Materials broken down into separate streams for further reprocessing and/or onward reprocessing/recycling.
Large Domestic Appliances  large appliances	European Metal Recycling Ltd	European Metal Recycling Ltd, Birmingham	Large Domestic Appliances are shredded in a hammer mill with the resulting metals segregated for recycling. The non-metallic components are sent for further reprocessing in the UK.
Mineral Oil/Used Engine Oil  used engine oil	Veolia	Robert Hopkins, West Bromwich	Oils are recovered and blended into recovered fuels and alternative fuels.

Bickenhill Household Waste Recycling Centre (HWRC) 2022-2023

Material	Site Operator	Reprocessor (Initial)	End Use
<p>Vegetable Oil</p> 	Veolia	Robert Hopkins, West Bromwich	Reprocessed into a biofuel which is then used to generate electricity and heat in specific bioenergy Combined Heat and Power (CHP) plants.
<p>Automotive Batteries</p> 	Veolia	H J Enthoven Ltd, West Midlands	Batteries separated into separate material fractions, i.e. metal and plastic for reuse in manufacturing.
<p>Household Batteries</p> 	Veolia	H J Enthoven Ltd, West Midlands	Batteries separated into separate material fractions, i.e. metal and plastic for reuse in manufacturing.
<p>Fridges and Freezers</p> 		The Appliance Recycling Group, West Bromwich	Broken down into separate components for reuse and remanufacturing within the UK, Europe and the Far East. CFC's are extracted for safe disposal.
<p>Wood and Timber Low Grade Wood Products (Chipboard and MDF)</p> 	Veolia	Veolia, Berkswell	All wood waste is shredded to produce pellets and wood chippings for biofuels. For more information

Bickenhill Household Waste Recycling Centre (HWRC) 2022-2023

Material	Site Operator	Reprocessor (Initial)	End Use
<p>Green Waste</p> 	Veolia	Suez, Recycling & Recovery UK LTD, Warwickshire	Composted in windrows to produce compost which is sold through national retailers under different brands.
<p>Mattresses</p> 	Veolia	Circum Fibres Ltd, Coventry	<p>Mattresses are deconstructed into their constituent parts (PU Foam, Polyester, Jute, Mixed Fibres, Metal and Waste to Energy) by hand for recycling or disposal to RDF where un-usable or highly contaminated.</p> <p>The process can be found here.</p>
<p>Paint</p> 	Veolia	<p>Veolia Empire Works, Aldridge</p> <p>Aqua Force Special Waste Limited, West Midlands</p>	<p>Collected paint is sorted into solvent based and water based material (hazardous and non-hazardous). Solvent based paints are used for solvent blending and re-used as a secondary fuel, usually in cement kilns.</p> <p>Water based paints are used as a soil conditioner in composting facilities. Where practicable metal packaging is recovered for recycling.</p> <p>Plastic packaging is sent for disposal to landfill due to the contaminated nature of the material.</p>
<p>Gas Bottles</p> 	Veolia	<p>Brooksight</p> <p>Synergy</p> <p>BOC Gases</p> <p>Wastecare Limited</p> <p>FloGas Britain Ltd</p>	Collected by distributors to be refilled and redistributed, refurbished or reprocessed into scrap metal.

Bickenhill Household Waste Recycling Centre (HWRC) 2022-2023

Material	Site Operator	Reprocessor (Initial)	End Use
<p>Small Domestic Appliances</p>  <p>small appliances</p>		<p>Envirocom England Limited, Grantham</p>	<p>Broken down into separate components for further recycling, reprocessing and reuse.</p>
<p>TV's and Display Screens</p>  <p>tvs & monitors</p>	<p>Veolia</p>	<p>Mekatek Recycling LTD, Tredgar</p>	<p>TV's and display screens are deconstructed into metals, glass, plastics and residual components. These are then recycled or disposed of to landfill.</p>
<p>Fluorescent Tubes and CFL's</p>  <p>fluorescent tubes</p>	<p>Veolia</p>	<p>Mercury Recycling Ltd, Manchester</p>	<p>Lamps are deconstructed into glass, mercury, gas and metals. The different components are recycled with the mercury being recycled into new lamps.</p>
<p>Rubble</p>  <p>hardcore & rubble</p>	<p>Veolia</p>	<p>NRS Waste Management Services, Coventry</p>	<p>Reprocessed into secondary aggregate to industry approved standards for use in the construction industry.</p>
<p>Recovered Residual Waste</p>  <p>general waste</p>	<p>Veolia</p>	<p>Coventry and Solihull Waste Disposal Company, Coventry</p>	<p>Material not landfilled. Value is recovered as the waste is sent to an energy from waste facility with the heat being recovered to generate electricity and heat local buildings. For more information.</p>
<p>Residual Waste - Disposal</p>	<p>Veolia</p>	<p>FCC Environmental – Bubbenhall, Warwickshire</p>	<p>Not Recycled or Recovered - material is landfilled Waste that cannot be sent to the Energy from Waste facility is disposed of to Landfill. Waste is buried in engineered covered cells where it decomposes over a long period of time with little or no value recovered. This results in the</p>

Bickenhill Household Waste Recycling Centre (HWRC) 2022-2023

Material		Site Operator	Reprocessor (Initial)	End Use
	<p>general waste</p>			generation of methane gas which is captured and used to produce electricity.

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