

Reducing waste and recycling in your organisation



This information pack has been produced to help your organisation establish a successful recycling scheme as well as providing information on other ways in which you can improve your environmental performance.

Implementing or improving a recycling scheme is a great way for your organisation to improve its services, demonstrate a commitment to the environment and work towards an environmental accreditation.

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Section 1



Introduction

This pack has been put together to help you and your organisation reduce waste and recycle. The pack provides you with simple and straightforward information on why we need to reduce waste and recycle and how your organisation can do its bit.

The pack has been divided into sections so that you can pick out which information and actions will be most applicable and beneficial to your organisation.

What's all this recycling business about then?

Where we are now

- London's businesses produce approximately 13.8 million tonnes of waste each year.
- Up to 80% of waste from businesses can be recycled.

Economic costs of our waste

- The average business spends up to 3.4 per cent of annual turnover on managing its waste.
- It makes good business sense to use your resources efficiently. The cost of products and materials is rising and by changing the way you think and deal with your rubbish you can save money.
- The cost of sending one tonne of waste to landfill is £89 in 2009 and is due to rise by £8 each year. The council and waste contractors may have to pass on these rising costs to your organisation.

Environmental costs of our waste

- We are running out of landfill space to bury our rubbish.
- By sending waste to landfill we are throwing away valuable resources. Damaging industrial processes are then needed to convert more virgin resources into new products to replace those thrown away.
- Methane emissions from landfill sites are contributing to global warming.
- Seepage from landfill sites can cause pollution of groundwater.

Recycling improves resource efficiency and saves finite resources

It works! Recycling from businesses and households in the UK already saves:

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- 18 million tonnes of carbon dioxide per year
- This is the equivalent in Green House Gas emissions to taking 3.5 million cars off our roads (DEFRA: Department of Environment, Food and Rural Affairs)

Reducing, reusing and recycling

Here are some top tips for how you can do your bit to Reduce, Reuse and Recycle your waste!

You can **reduce** the amount of waste you produce! Here are some tips for doing this:

- Set double-sided printing as default on your printers and show everyone how they can alter printer settings to ensure that all paper is printed on both sides.
- Minimise the number of internal waste bins and increase the number of recycling bins in your building.
- Ask suppliers to take back packaging or deliver in returnable crates or boxes. For example – ask caterers to collect their trays after events.
- Choose suppliers who use packaging that can be recycled. For example Ethical Superstore use recyclable paper to protect their products rather than bubble wrap which is not recyclable.
- Encourage people to make and bring in waste free lunches. For example they could bring sandwiches or soup in reusable containers. Packed lunches not only save money but can be a much healthier alternative to shop bought lunches.
- Food shares. Ask people to contribute to internal meetings and events by bringing in and sharing their favourite dish with colleagues. This will avoid waste produced by external caterers. Encourage people to take home leftovers to reduce food waste.
- When ordering external printing jobs ensure that only the amount required is ordered. Extras are often offered at a reduced price, are not then needed and are thrown away.

You can reuse materials! Here are some tips for doing this:

- Have a **dedicated scrap paper printer** – use this printer for printing draft and internal documents and encourage everyone to supply the paper tray with paper which has only been used on one side
- Staple together scrap paper and use it as a note pad.

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- Use the milkman! If you need a regular supply of milk find out who your local milkman is and arrange delivery of milk in returnable glass bottles.
- Reuse packaging, padded envelopes, stationery, folders and boxes where possible. Allocate a shelf or cupboard for these items and tell people about it.
- Carry out a regular stationery amnesty. Ask everyone to clean their desk regularly and bring any stationery not used to a central location so that they can be re-used.
- Have reusable mugs, glasses, plates and cutlery rather than disposable versions for meetings and events. Reserve a box of reusable crockery for larger events and meetings.
- Have a supply of reusable shopping bags for people to use rather than taking disposable plastic bags.
- Buy second hand furniture and goods where appropriate. Sign up for your local Freegle scheme and exchange used products in your neighbourhood, or visit a local charity shop. Greenworks sell good quality used office furniture.

Some businesses can recycle up to 80% of the waste they produce! The table below explains what you can and can't recycle using the council recycling service.

	Yes please	No thanks
	Newspapers & magazines White and coloured paper Books, catalogues & directories Leaflets & envelopes Card & cardboard	Wet paper
	Glass bottles Glass jars	Lids, tops & corks Pyrex Mirrors or window glass Broken glass
	Cans & tins Empty aerosols	Foil Foil containers Food
	Milk, juice & soup cartons Tetra Pak cartons	Plastic tops Coffee cups Ice cream tubs Pringle pots
	Plastic drinks bottles Detergent bottles Shampoo bottles	Lids & tops Plastic film & wrapping Plastic food trays & packaging Margarine tubs & yoghurt pots Plastic bags

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Additional materials can be recycled using the following schemes:

- Most large supermarkets have plastic bag recycling points in store.
- Set up a wormery, compost bin or Bokashi system for food waste. Run an internet search to find out wormery, compost bin and bokashi suppliers.
- Textiles can be donated to charities.
- From February 2010 shops selling large volumes of batteries have to provide battery recycling facilities in store so look out for these at supermarkets and electrical retailers
- Donate used IT equipment and unwanted furniture to charities. Used furniture can be recycled by Greenworks of the Furniture Reuse Network.
- Implement a system to recycle old mobile phones. There are a number of charities that offer this service such as Oxfam and Action Aid. You can also contact Fones for Safety (a local London charity) who will supply you with a box for collection of old phones which can be used as safety alarms for domestic violence victims.

To find out about more schemes or where you can recycle additional materials please visit www.recyclenow.com

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Step by step guide to setting up a recycling scheme

Here is a simple step-by-step guide on how to set up and maintain an effective recycling scheme within your medical establishment:

Step 1: Carry out a waste audit

Waste audits are a quick and easy way to determine quantities and types of waste you are producing and will help you identify the best ways to reduce your waste. The type and extent of the waste audit will depend on the time and resources you have available.

If you have limited time and resources you can conduct some basic research. This could include the following:

- Determine how much waste is produced and collected by referring to your legal annual waste removal documents the 'waste transfer notes' and speaking to your contractor.
- Contact the contractor to obtain information on what happens to the rubbish after it leaves the site.
- Identify what has been done so far to reduce, reuse and recycle your rubbish.
- Visually assess the amount and type of waste that is in your waste and recycling bins. The visual audit will include a building tour identifying:
 - Places that generate rubbish
 - Places where recycling is working well
 - Who is responsible for managing the rubbish
 - Estimates on the type and quantities of materials in the external and internal bins

If you have the time and resources available you could undertake the above mentioned tasks along with a more detailed hand-sorting waste audit to determine the waste's composition. The more detailed waste audit will include the following activities:

- Label and weigh all bags of rubbish and recyclables from different areas of the building.
- Hand-sort materials and place them into different waste stream categories
- Measure and record all findings

Be very careful if you decide to handle waste, make sure you complete a risk assessment and wear protective clothing. Further details of how to carry out a waste audit can be found at:

Recycle More

<http://www.recycle-more.co.uk/nav/page575.aspx>

Section 3



How to establish environmental good practice

1. Implement an Environmental Policy?

What is it?

An environmental policy is an organisation's written statement outlining its aims and principles in relation to managing the environmental impacts of its operation.

Why should my organisation have an environmental policy?

An environmental policy can:

- Enhance the image of your organisation
- Help to save money in terms of consumption, waste and recycling
- Clearly indicate your objectives to your supply chain, clients and employees
- Provide strategic direction for the business
- Help your organisation stay within the law

Small organisations with limited resources do not necessarily need an Environmental Management System (framework through which your organisation's environmental performance can be monitored, improved and controlled). An environmental policy supported by a list of actions which are regularly reviewed will adequately demonstrate your environmental commitment.

How should I write an environmental policy?

Your policy should outline:

- The organisation's mission and information about its operations
- A commitment to continually improve and monitor environmental performance
- A commitment to managing your environmental impacts
- Your compliance with relevant environmental legislation (as a minimum)
- Your expectations from suppliers and sub-contractors
- A commitment to employee awareness and training

Ideally the environmental policy should be fully supported by high level managers. The involvement and input of all staff at the earliest stages can give significant benefits as it will help to motivate them to deliver it and will ensure the policy is full of positive and practical actions. It is important to include waste reduction and recycling in the environmental policy

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No two policies are the same therefore a good starting point is to review examples of policies written by other organisations and select a format that suits your organisation. Through the links below you can access some example policies.

Further information

The following links provide further information and some example environmental policies:

<http://www.sdu.nhs.uk/>

<http://www.dh.gov.uk/en/managingyourorganisation/estatesandfacilitiesmanagement/sustainabledevelopment/index.htm>

<http://www.businesslink.gov.uk>

<http://www.envirowise.gov.uk/uk>

<http://www.british-accreditation.co.uk>

3. Staff behaviour

Making environmental measures part of your organisations standard practice will encourage behaviour change and in time will become integrated into the day to day workings. This will be helped with the implementation of an environmental policy as mentioned above.

All members of staff should be encouraged to take the environmental policy seriously as the more support there is the better the results will be.

Top tips on changing staff behaviour to improve recycling and environmental performance

- i) Appoint an organisational champion to co-ordinate and manage the environmental programme. Depending on the size of your organisation an environmental team can assist the champion.
- ii) Get buy in and support from senior management for the environmental programme and all project plans and schemes.
- iii) Staff need to be given facts and evidence about the scheme they are expected to participate in e.g. the cost of waste disposal to the organisation and the benefits of the new scheme.
- iv) Staff need to be motivated to use the new schemes and need to be fully informed why they should change the way they work.

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- v) Feedback from staff is invaluable and should be encouraged to help improve the schemes and ensure continued staff support.
- vi) Feedback to staff on how the schemes are progressing is necessary to keep motivation levels high.
- vii) Incentive schemes can be used to encourage staff. These could include financial incentives, prizes, competitions between departments or personal recognition.
- viii) New staff should receive information about the schemes in place. This can be done through providing information in the induction pack or in the induction training session.

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Sustainable Procurement

The overall aim of the Department of Health (DH) is to improve the health and wellbeing of the people of England. Sustainable development has an important role to play in this. It is when considering the balance of social, environmental and economic factors that we realise that what we buy, and how we buy it contributes to achieving sustainable development.

Sustainable procurement means considering what products are made of, where they have come from and who made them. It involves integrating environmental considerations into all stages of the purchasing process: from avoiding unnecessary purchases and identifying greener products, to the specifications you use for contracts and whole life costing.

Why bother?

The health sector will increasingly be asked what they are doing not only to improve health, but reduce its carbon footprint, work with local communities and ensure that goods are ethically and sustainably sourced.

The NHS has a carbon footprint of 18 million tonnes CO₂ per year. This is composed of energy (22%), travel (18%) and procurement (60%). It's been established that the NHS should have a target of reducing its carbon footprint by 10% by 2015.

The benefits of sustainable procurement can include gaining a competitive edge, cost savings, enhanced public image, tax breaks, eligibility for loans and the potential to add green claims to your products.

There are many opportunities for the NHS to procure, commission, plan and work jointly with local authorities and other local organisations through Local Strategic Partnerships, Local Area Agreements.

How to?

There are a number of templates and tools that have been developed to support Trusts and Collaborative Procurement Hubs integrate sustainability within their contracting and decision making.

Sustainable Procurement Roadmap - a simple flowchart has been developed to enable any NHS organisation to incorporate sustainable procurement within its operations. This can be found in NHS Purchasing and Supply Agency website:

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www.pasa.nhs.uk/PASAWeb/NHSprocurement/Sustainabledevelopment/SustainabilitytoolsforTrusts/LandingPage.htm

There is also lots of information available on how to improve your organisation's sustainable procurement. The following step by step guide is taken from the Mayor of London's Green Procurement Code website¹:

1. Question the need for the purchase in the first place. Can existing products or equipment be used instead of buying new goods? Can the requirement be met by hiring or sharing instead of purchasing?
2. Designate a member of staff to spearhead your green procurement strategy.
3. Agree green purchasing objectives and integrate them into a simple green procurement policy that clearly states your intentions. Ensure this fits in with your environmental policy.
4. Get top level support for your objectives from the chief executive or finance director.
5. Communicate your strategy and processes to staff and suppliers so they are clear on what is expected of them.
6. Regularly audit your purchases.
7. Develop green specifications and contract weighting tools.
8. Assess the environmental impact of your purchases against emissions to air and water, waste to landfill, resource use and environmental quality.
9. Engage existing suppliers who may be able to provide products or services to fit in with your new procurement policy. Seek their feedback before targeting new suppliers or contractors.
10. Ask your supplier for samples of green products.
11. Incorporate green procurement criteria into all key contracts focusing on those which are high spend, have a high environmental impact and are easily influenced.
12. Incorporate environmental specifications into contracts including energy and water efficiency, recycled content, reusable packaging and products, no hazardous

¹ <http://www.greenprocurementcode.co.uk/>

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chemicals and sustainably managed timber such as Forest Stewardship Council (FSC) certified. See the Local Environmental Management Systems and Procurement (LEAP) toolkit² or European Union Green Public Procurement website for examples of environmental criteria³.

13. Award new contracts on the basis of value for money, green credentials and whole life costing, not the lowest price. This takes into account whole life costs; green purchases may lower operating or disposal costs. Choose products that use less energy (minimum A-rated energy efficient), have a long life span and can be easily repaired or reused. Specify that green products / services should be used as part of the tender process.
14. Implement contract and performance monitoring, including the environmental benefits of your new product or service.
15. Improve performance such as minimising delivery frequency and miles, and reducing packaging.

NHS Trust

16. Procurement professionals should be aware of sustainable development issues in relation to procurement, and should look for opportunities to pursue more sustainable options.
17. Trusts should join networks for sustainable procurement professionals in the NHS to share information and experiences regarding sustainable procurement.
18. Trusts should ensure that the detailed specification in their contracts are not unnecessarily encouraging long distance transport of suppliers or disadvantaging smaller suppliers.
19. Trusts should raise the profile of sustainability with NHS Trust staff, with regard to procurement of services and other goods.
20. Trusts should use NHS PASA or OGC contracts that have already taken into account and negotiated more stringent environmental criteria within the specification.
21. Trusts should identify high environmental impact/risk contracts that are coming up for renewal, and set up a team to work together to examine increasing environmental and social aspects within the specification.

² <http://www.iclei-europe.org/index.php?id=4094>

³ http://ec.europa.eu/environment/gpp/index_en.htm

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22. Trusts should develop a procurement strategy that incorporates elements of sustainable development and identifies priority areas for attention, and secure Board-level support for it

Sustainable products and suppliers

The links below will help you source green products and services:

Buying Solutions. The public sector's national procurement portal provides a choice of over 500,000 products and services available through a network of over 600 suppliers.

<http://www.buyingsolutions.gov.uk>

Fairtrade Foundation wholesale suppliers directory.

A list of wholesalers who sell Fairtrade certified products to the retail market.

http://www.fairtrade.org.uk/products/wholesaler_suppliers.aspx

Green Procurement Code sustainable product directory. A comprehensive database of sustainable products and suppliers. Contains information on over 500 products.

http://www.greenprocurementcodedirectory.co.uk/product/product_directory.asp

Water Technology List. A list of products that have been independently assessed and classified as encouraging sustainable water use

<http://www.eca-water.gov.uk>

Energy Technology List. A list of products that have been independently assessed and classified as producing reductions in energy consumption.

<http://www.eca.gov.uk/etl/find/>

Further information and support on sustainable procurement

The Mayor of London's Green Procurement Code is a free support service for London based organisations committed to reducing their environmental impact through responsible purchasing www.greenprocurementcode.co.uk

Defra's 'Quick Wins' are specifically designed for procurers. They are a set of sustainable specifications for a range of commonly-purchased products, such as IT equipment, white goods and paper.

<http://www.defra.gov.uk/sustainable/government/what/priority/consumption-production/quickWins/>

Procuring for health and sustainability 2012: sustainable procurement action plan: This action plan sets out how, in the next five years, the health and social care sector in England will use sustainable procurement, not only of equipment and supplies, but also

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buildings, facilities and services, to achieve improved health and well-being for the people, the environment and the economy.

<http://www.pasa.nhs.uk/PASAWeb/NHSprocurement/Sustainabledevelopment/Procurement.htm>

The business case for sustainable procurement has already been made. The National Institute for Health and Clinical Excellence identified benefits of implementing sustainable procurement including: efficiency savings through lower lifetime costs of purchases, improving service delivery through better relationships with suppliers and more innovative solutions to meet healthcare needs .Making the Case for Sustainable Procurement: The NHS as a Good Corporate Citizen, NICE, June 2005

<http://www.nice.org.uk/page.aspx?o=514063>

There are many case studies that have been developed by NHS PASA, NHS Sustainable Development Unit, Sustainable Development Commission and by other public sector organisations.

<http://www.pasa.nhs.uk/PASAWeb/NHSprocurement/Sustainabledevelopment/SustainabilitytoolsforTrusts/Casestudies/LandingPage.htm>

The NHS Supply Chain ensures that all procurement activities account for significant sustainable development aspects. They procure products and services from sustainable sources as far as possible and seek to improve environmental impacts associated with the purchase and supply of products and services.

<http://www.supplychain.nhs.uk/portal/page/portal/Public/Sustainability/Sustainable%20procurement>

Coote, A., ed. (2002) Claiming the health dividend. Unlocking the benefits of NHS spending. London: King's Fund.

DH (2004) Choosing health: making healthy choices easier. London: Department of Health. www.dh.gov.uk

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Contact details and further sources of information

London Borough of Hammersmith and Fulham

Greener Hotline Tel: 020 8753 1100 (8am-8pm Mon to Fri)

Email: Cleaner.Greener@lbhf.gov.uk

Website: www.lbhf.gov.uk

London Borough of Wandsworth

Waste services Tel: 020 8871 8558

Email: wasteservices@wandsworth.gov.uk

Website: www.wandsworth.gov.uk

London Borough of Lambeth

Tel: 020 7926 9000

Email: recycling@lambeth.gov.uk

Website: www.lambeth.gov.uk

Royal Borough of Kensington and Chelsea

Streetline Tel: 020 7361 3001

Email: streetline@rbkc.gov.uk

Website: www.rbkc.gov.uk

Official Publications on Sustainable Development

Department of Health, 2008. Health Technical Memorandum 07-04: Water management and water efficiency (HTM)

London: HMSO

Website: <https://estatesknowledge.dh.gov.uk/>

Environment and sustainability: Health Technical Memorandum 07-01: Safe management of healthcare waste

Website: www.dh.gov.uk

Department of Health, 2008. Taking the long term view: the Department of Health's strategy for delivering sustainable development 2008-2011, London: HMSO

Website: <https://estatesknowledge.dh.gov.uk/>

The Sustainable Development Commission, Good Corporate Citizenship Assessment Model

Website: www.corporatecitizen.nhs.uk

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NHS Sustainable Development Unit: Saving Carbon, Improving Health

Website: <http://www.sdu.nhs.uk/>

NHS Carbon Management Programme

Website: www.carbontrust.co.uk/carbon/publicsector/nhs/

Further waste-specific guidance should be sought from the following websites:

Department of Environment Food and Rural Affairs (Defra):

www.defra.gov.uk

Environment Agency (EA):

www.environment-agency.gov.uk

Health and Safety Executive (HSE):

www.hse.gov.uk

Department of the Environment (NI):

www.doeni.gov.uk

British Veterinary Association:

www.bva.co.uk

Standards for better health. The Stationery Office, 2004.

<http://www.dh.gov.uk>

Waste management: the duty of care – a code of practice.

http://www.defra.gov.uk/environment/waste/management/doc/pdf/waste_man_duty_code.pdf

Further information on recycling and waste reduction

Recycle Western Riverside Campaign www.westernriverside.org.uk

Recycle Western Riverside is a campaign which encourages residents to recycle, reduce their rubbish and buy more recycled products

Western Riverside Waste Authority www.wrwa.gov.uk

Western Riverside Waste Authority (WRWA) is the statutory body, or local authority, responsible for the disposal of household, commercial and industrial waste delivered to it by the London Boroughs of Hammersmith and Fulham, Lambeth, Wandsworth and the Royal Borough of Kensington and Chelsea.

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Envirowise www.envirowise.gov.uk

Free advice and support on practical ways to increase profits, minimise waste and reduce environmental impact.

Waste Aware Business <http://www.wasteawarebusiness.org.uk/>

Waste Aware Business is a national campaign run by Waste Aware Scotland. It aims to raise awareness of how businesses can deal with their waste more sustainably.

Recycle Now www.recyclenow.com

The Recycle Now campaign has been created, and is run by WRAP (Waste and Resources Action programme)

Recycle for London www.recycleforlondon.com

Capital waste facts www.capitalwastefacts.com

Further information on the environment and your organisation

Carbon Trust: <http://www.carbontrust.co.uk>

The Carbon Trust's mission is to accelerate the move to a low carbon economy now and develop commercial low carbon technologies for the future.

Energy Saving Trust (EST): <http://www.energysavingtrust.org.uk/>

The Energy Saving Trust is a non-profit organisation that provides free and impartial advice on how to stop wasting energy.

Ethical Property Foundation: <http://www.ethicalproperty.org.uk/>

Advise charities and community groups on property issues. Our Property Advice Service offers independent, ethical advice and training, helping almost 600 organisations to rent, buy, let or manage property since 2005. We help reduce the social and environmental impact of commercial property, setting out best practice for landlords and developers.

Forum for the Future: <http://www.forumforthefuture.org.uk/>

Forum for the Future is an independent, non-profit organisation with a mission to promote sustainable development

Good Energy: <http://www.goodenergy.co.uk/foe>

Friends of the Earth energy suppliers

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Further information environmental legislation

Duty of Care

A Duty of Care license is imposed on persons or businesses that produce, import, carry, keep, treat or dispose of controlled waste

<http://www.netregs.gov.uk>

Pre-treatment regulations

The pre-treatment regulations have been introduced in accordance with the Landfill Directive and stipulate the need to treat all non-hazardous waste produced by commercial and industrial premises before it can go to landfill.

<http://www.environment-agency.gov.uk>

Waste Electrical and Electronic Equipment, Packaging and Packaging Waste and Batteries Directive

These three directives are focused on producer responsibility however they impact on all businesses that produce these types of waste. The WEEE Directive requires responsible collection and recycling of end of life equipment such as computers and printers, the packaging and packaging waste directive requires collection and recycling of packaging waste and the batteries directive similarly focuses on diverting batteries from landfill to reprocessing and recycling.

<http://www.netregs.gov.uk>

Department for Environment Food and Rural Affairs www.defra.gov.uk

UK government department responsible for policy and regulations on the environment, food and rural affairs

Lets recycle news pages www.letsrecycle.com

Weekly waste and recycling newsletter

Waste Resources Action Programme www.wrap.org.uk

Helps businesses and local authorities to reduce waste and recycle more, making better use of resources and helping tackle climate change.

What happens to recycling collected in the Western Riverside region?



The collection vehicles are weighed on arrival at the station.

Introduction

This worksheet outlines what happens to recycling collected in the Royal Borough of Kensington and Chelsea and the London Boroughs of Wandsworth, Lambeth and Hammersmith and Fulham. These four boroughs are responsible for collecting waste and recycling within their boundaries and delivering it to Western Riverside Waste Authority (WRWA) for disposal. WRWA has a long term contract with Cory Environmental Ltd to dispose of the materials on its behalf.

From the doorstep

Your mixed recyclable materials are collected from orange sacks and recycling banks by the local council. The mixed materials are put into recycling collection vehicles and taken to bulking stations.

Depending on where you live, your recycling may be bulked at Smugglers Way in Wandsworth, Cringle Dock in Battersea or Cremorne Wharf in Chelsea.



Recyclables are tipped into a tipping bay and inspected for quality purposes.

When vehicles arrive at the site they are weighed in and information about where the recycling was collected from is recorded. This lets the council and WRWA work out how much material is being recycled. The recycling is also inspected to see whether it is of a good quality and is not too contaminated by materials that cannot be recycled. Unfortunately if the recycling is very contaminated, it may not be recycled because the materials may be ruined or the contaminants may damage the equipment that will sort out the various materials or turn it into new products. In this instance the materials will be sent to landfill.

Bulking up and transport

Once at the bulking site the recycling vehicles drive to a tipping bay and tip the recycling out onto the ground where it is inspected. The mixed recyclables are then loaded into larger trucks and weighed out before being transported to a Materials Recovery Facility (MRF) in Kent. The MRF is where the materials are separated out from each other. In a few years time it is planned that the mixed recyclables will be processed more locally in a MRF in Wandsworth.



The recyclables are transported to a MRF where the sorting process begins.

Once the vehicles arrive at the MRF they are weighed in and the materials are again assessed for their quality. This allows the MRF operator to provide a waste transfer note which can be used as proof that the materials have been sent for recycling.



The 'star screen' sorts glass from other materials.



The 'ballistic separator' shakes the materials and smaller items fall through holes onto another conveyor belt.



The rotating 'trommel' filters out any remaining small items, leaving paper, cardboard and orange sacks behind.



The picking cabin is the final stage in the sorting process.

Sorting recycling

The MRF is a high tech series of machinery that mechanically sorts the recyclable materials based on their specific properties. The materials are unloaded into a 'bag splitter' which uses small blades to rip open orange sacks to release the various materials.

The loose materials move onto 'star screen' which looks like an inclined conveyor belt. Larger materials are propelled forward by rotating discs shaped like stars while glass, which has generally all been broken during the collection and transport process, falls through holes onto another conveyor belt. An 'air knife', a jet of air, blows any light materials such as paper labels off the conveyor belt before the broken glass falls into a container ready for onward transport.

The other materials travel up a 'ballistic separator'. This is basically a set of conveyor belts with holes that shake the materials. Smaller items such as cans and plastic bottles fall through the holes onto another conveyor belt while larger flat items such as paper, card and the empty orange sacks are carried upwards.

As the cans and plastic bottles pass along a conveyor belt a magnet pulls steel cans from the belt and drops them into a storage bay and an eddy current repels aluminium cans into another bay. Plastic bottles fall into a third bay at the end of the belt.

The paper, cardboard and empty orange sacks reach the top of the ballistic separator and pass into a large rotating drum with holes called a 'trommel' that looks like a washing machine drum. Any remaining small materials such as glass fall through the holes in the drum and the larger materials travel up another conveyor belt to a picking cabin.

In the picking cabin any remaining materials are sorted by hand. Empty orange sacks and contaminant materials are pulled off the conveyor belt and sorted into different containers and any orange sacks that have not already split open are dropped onto a conveyor belt to return to the start of the process. Cardboard and paper are sorted into different containers depending on their quality. Drink cartons are currently sorted into the same container as low quality paper.

All the separated materials are baled and stored on the site ready to be transported to different sites to be made into new products.

Turning materials into new products

In the UK recycling is not only driven by legislation that requires councils to provide recycling services, it is also driven by the market economy. Legislation pushes the collection of materials and market demand means that there will be a home for the materials after they are collected. This is good as it encourages more recycling and means the government does not have to pay out money over long periods of time to support the processing of material. It also means that some of the cost of sorting the materials can be covered by selling them.

It is difficult to define exactly what your recycled materials will get turned into or where they are processed, as market demand changes frequently. Where possible materials are recycled in the UK, although sometimes it is necessary for them to be sent abroad



Separated materials are baled and stored, ready to be transported to various processing sites.



Glass can be turned into a variety of aggregates.



Plastic can be turned into a variety of new products, including new bottles, orange sacks, fleeces or garden furniture.



Aluminium and steel cans are shredded and melted before being turned into new products such as new cans, car or airplane parts.

for recycling. This is because of market fluctuations and because the type of facilities for recycling materials is limited in the UK. There are strict controls to ensure that materials that are exported are actually recycled. To minimise the impact of transportation materials are often put into ships that have delivered products to the UK and would otherwise have returned to their home country empty. Regardless of where the materials are sent a waste transfer note is given to the MRF operator to provide evidence that materials have been sent for recycling.

Glass bottles and jars¹

Glass bottles and jars are generally delivered to a London-based aggregates company. They wash the glass, crush it and screen it to turn it into a fine material like sand. This product can then be used as building sand or it may undergo further processing to turn it into a product called ©Hasopor. To make Hasopor the glass is ground into the consistency of flour and thermally treated to expand the particles and bind them together. This produces a material that is similar in appearance to barbecue briquettes that can be used for floor and wall insulation and lightweight construction aggregate.

Plastic bottles and orange sacks²

The first plastics plant is due to open in London soon, although it is not yet operational. Because of the lack of facilities to process plastic in the UK, plastic bottles and orange sacks are exported and processed in other countries including Europe and China.

The plastic is usually sorted into categories: orange sacks; HDPE bottles (usually opaque bottles such as milk bottles, shampoo bottles and bleach bottles); PET bottles (usually clear bottles such as fizzy drink bottles with a hard moulded spot on the base); and PVC bottles (clear fizzy drinks bottles with a seam at the base). Each type of plastic may be processed in a slightly different way, but in general the bottles and sacks are screened for materials that cannot be recycled, cut into small flakes, washed at a high temperature and melted. Sometimes colouring is added. The melted plastic can be turned into pellets in which case it may be used to make items such as new bottles, new orange sacks, car parts, home composters or garden furniture. It may also be spun into a fine thread-like material which may be used to make clothing such as fleece jackets and hats or fibre filling for items such as sleeping bags and duvets.

Cans and aerosols³

Aluminium cans and aerosol canisters are delivered to a processing plant in the North West of England. Once they arrive at the site they are shredded and a magnet is used to remove any steel which may contaminate the final product. Hot air is blown onto the shreds to burn off the paint used to label the cans and aerosols. The shredded aluminium is then fed into a furnace. Once the aluminium has melted, non-metallic particles are removed and it is fed into a mould to be cast into 'ingots'. Ingots of cast aluminium are sold onwards and can be used for multiple purposes including being turned into new cans and aerosols, and for car and aeroplane construction.

Steel cans and aerosol canisters are generally sent for processing in the north of England or in Wales. The cans and aerosols are shredded and contamination is removed. They are sent on for



Paper is pulped and any ink is removed.



The clean fibres are turned into new paper which is wound onto reels so it can be sold on.

What happens to other materials sent to the MRF?

Although local councils are always looking for ways to recycle more materials it is only possible to recycle paper, cardboard, cans, empty aerosols, plastic bottles and food and drink cartons through the orange sacks and recycling banks at the moment.

Any other materials put in the orange sacks or recycling banks are called contaminants and cannot be recycled so are sent for landfill or incineration.

Contaminant materials can cause significant damage to the recyclable materials and the equipment at the MRF. For example, food waste makes recycling unpleasant to collect and sort and damages paper so it cannot be recycled, and textiles can wind around equipment at the MRF and damage it.

There are clearly labelled bring banks throughout the boroughs to which residents can take other materials for recycling including textiles, printer cartridges, books and bric-a-brac.

further processing which involves removing the thin tin lining, melting the steel, and pouring it into moulds. The steel can be recycled into a variety of products including new cans, bicycle frames, pipes and train tracks.

Paper and cardboard⁴

Paper and cardboard is sent to multiple processors in Kent, the North West of England, Europe and China. The location of the processor depends on the grade of the paper (e.g. whether it is office paper, newspaper or a mixed grade including cardboard and food and drink cartons) and the market for the material at different times.

Different grades of paper and cardboard are processed in slightly different ways although generally it is mixed with hot water to turn it into pulp and the ink is removed using an industrial soap. The fibres are screened to remove contaminants such as staples, plastic and glue. The clean fibres are spread onto meshes and pressure is applied to remove water and press the fibres together. The recycled paper is dried and wound onto reels ready to be turned into new products such as office paper, newspapers, books and magazines.

A small amount of paper sent for recycling is turned into other products such as jiffy bags, loft insulation and road surfaces using a variety of different processes. Cardboard is usually made into new boxes and packaging, but can also be used as animal bedding or even coffins!

Food and drink cartons⁵

Since there are relatively small quantities of cartons being collected currently, they are being included in the mixed paper grade which is sold to different processors as outlined above.

Currently only the fibre part of the carton is recycled. The plastic and aluminium that is used to keep cartons airtight is generally used by paper mills in their integrated energy from waste (EfW) plants to provide energy for their processes. If the EfW plants generate more energy than the mill can use the surplus energy may be exported to other users on their sites or to the national grid.

It is expected that the amount of cartons will increase in the future due to greater resident awareness. This will mean that, at some point, the amount of cartons included in the mixed paper will start to affect the quality of paper produced and the paper mills will not accept it. At this point the cartons will be exported as a single stream to Finland or Italy – the only places where there are mills designed for this material. The only UK mill in Scotland closed in 2006.

¹ Based on information from www.dayaggregates.com

² Based on information from www.packaging-technology.com and www.recyclenow.com

³ Aluminium processing details summarised from www.alupro.org.uk and steel from www.recyclenow.com

⁴ Paper information based on information from www.recyclenow.com and cardboard from www.recyclingconsortium.org.uk

⁵ Based on information provided via Cory Environmental from Viridor in 2008

Please note that the photographs used in this factsheet are for illustration purposes only and were taken at a variety of locations.