



# **SORTING RESIDUAL WASTE:** **A GUIDE FOR COUNCILS TO** **SAVE MONEY AND HELP THE** **ENVIRONMENT BY CUTTING BACK** **ON RESIDUAL WASTE**

- **DOORSTEP RECYCLING**
- **FOOD WASTE**
- **FURNITURE**
- **DIY WASTE**



**Friends of  
the Earth**

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# EXECUTIVE SUMMARY

Residual waste – the waste that isn't prevented, reused, recycled or composted – is both an environmental problem and a practical one for local authorities. From an environmental point of view material in residual waste is literally wasted as the potential for re-use of any resources is lost. From a practical point of view residual waste also needs to be dealt with. If it is biodegradable then municipal residual waste needs to be diverted from landfill in order to reduce climate change impacts and meet Landfill Directive targets.

Friends of the Earth commissioned research to find out what were the main materials and products getting into residual waste, and to identify the policy measures that could be used to get them out. The largest streams to tackle include food waste, furniture and DIY wastes.

This briefing, *Sorting Residual Waste*, addresses policies that can be undertaken at a local level, focusing particularly on

- (i) Maximising recycling rates, including maximising participation.
- (ii) Providing effective food waste collection.
- (iii) Using civic amenity sites to recycle DIY and other wastes.
- (iv) Improving bulky waste collections in a bid to maximise re-use of furniture.

The briefing also examines the issue of maximising the further removal of recyclable materials from the residual waste fraction, and the importance of flexible technologies for residual waste processing.

# WHAT CAN WE DO ABOUT RESIDUAL WASTE?

Residual waste is the waste that isn't prevented, reused, recycled or composted.

The loss of resources which are wasted in this way is having severe environmental impacts – including climate change, damage to biodiversity and depletion of water supplies. There is also an economic impact as prices of many resources increase.

For local authorities dealing with residual waste is also a practical problem, especially biodegradable municipal waste which needs to be diverted from landfill in order to reduce climate change impacts and meet Landfill Directive targets.

Residual waste drives the need for residual waste infrastructure. The more residual waste there is, the more landfills and treatment facilities are required.

In order to address these issues, we need to look to the top of the waste hierarchy

- Waste prevention is the best environmental option, avoiding resource use and saving energy and carbon dioxide (CO<sub>2</sub>) emissions.
- Reuse reduces the need for resources and manufacturing, saving energy and CO<sub>2</sub> emissions.
- Recycling reduces the need for extracting and reprocessing new materials, saving energy and CO<sub>2</sub> emissions –
  - the majority of life cycle assessments back recycling over incineration with energy recovery,
  - recycling in the UK is already saving around 10-15 million tonnes of CO<sub>2</sub> equivalent per year, equivalent to taking 3.5 million cars off the road.<sup>1</sup>
- Composting returns nutrients and structure to soils; displaces other fertilisers; sequesters carbon by keeping it out of the atmosphere; and, in the case of anaerobic digestion, produces methane which can be used as a 100 per cent renewable energy source.

There are other benefits to reducing residual waste. Waste prevention and increasing recycling, composting and reuse are cheaper than the alternative of landfilling or incineration, and much more acceptable to the public. The process of recycling and composting, from kerbside collection to the sorting and reprocessing of recyclables, creates more jobs than incineration and landfill.<sup>2</sup> Many waste reuse and recycling projects also deliver social benefits, linking to social inclusion or community development objectives.

Residual waste is expensive to collect and dispose of, and costs are set to increase. This is a crucial time for local authorities to ensure that they are doing everything possible to reduce residual municipal waste. In addition to increasing landfill prices, there is the threat of potential



Woodward

penalties under the Landfill Allowance Trading Scheme. After 2010, local authorities will be fined £150 per tonne if they landfill more than their allocation of biodegradable municipal waste, or will have to buy in extra allocations from other waste disposal authorities.

See briefing *Landfill Allowance Trading Scheme – how LATS works and the best way for councils to meet these targets, both financially and environmentally* [www.foe.co.uk/resource/briefings/lats.pdf](http://www.foe.co.uk/resource/briefings/lats.pdf)

Recycling and composting rates are increasing. Most households now have kerbside collections of recycling and a wider range of materials is being accepted. However there is still potential for councils to improve collection schemes and civic amenity sites.

Examples from around the world, including municipal recycling rates of 70 per cent in San Francisco and the Flanders region of Belgium, show us what is possible when effort is made in the right direction. This would maximise the potential of the valuable resources currently being wasted, and avoid the requirement for expensive new waste treatment facilities.

# WHAT IS IN RESIDUAL WASTE?

In 2007, Friends of the Earth commissioned EnviroCentre to undertake a two part research project:

The first phase identified what materials and products currently end up in residual municipal waste and in what quantities. See the report at [www.foe.co.uk/resource/reports/residual\\_waste.pdf](http://www.foe.co.uk/resource/reports/residual_waste.pdf)

The second phase identified how these materials and products could be removed from residual waste. See the report at [www.foe.co.uk/resource/reports/residual\\_waste\\_stagetwo.pdf](http://www.foe.co.uk/resource/reports/residual_waste_stagetwo.pdf)

The tonnage and composition of household residual waste was estimated, based on two scenarios – hypothetical and practical.

Estimates were made of hypothetical and practical capture rates for collected household, civic amenity and bulky waste components. For details of the assumptions made when estimating the capture rates, please see the first phase report. Using waste arisings data and compositional analysis data, the quantities of residual waste by component for the collected household, civic amenity and bulky waste streams was estimated. Note that one of the conclusions of the report was that the current systems for waste categorisation need to be improved.

## **SCENARIO 1: 'HYPOTHETICAL' CAPTURE RATE**

The hypothetical capture rate scenario assumed that the highest theoretical capture rates are achieved for all recyclable and compostable materials, and the best available recycling and composting schemes are in place and these collection systems operate at their theoretical optimum.

This table shows the tonnage per annum for the largest categories of materials that would be found in the residual waste (after recyclable and compostable materials were removed).

Waste Category	Hypothetical scenario (tonnes per annum)
Other paper and card	1,264,077
Disposable nappies	922,817
Plastic packaging (excluding dense plastic bottles)	726,130
Other miscellaneous combustibles	507,563
Other organic wastes	482,008
C&D wastes	450,737
Mixed bagged waste	212,904
Other non-combustible material	195,593
Furniture	146,441
Non-packaging glass	117,335
Carpet and underlay	95,094
Other potentially hazardous	70,495

**SCENARIO 2:  
'PRACTICAL' CAPTURE RATE**

The practical capture rate scenario assumed that a high capture rate is achieved for recyclable and compostable materials. This table shows what would be left in residual waste after recycling with a high capture rate.

Waste Category	Practical scenario (tonnes per annum)
Other paper and card	1,270,950
Plastic packaging (excluding dense plastic bottles)	1,215,253
Disposable nappies	922,817
Kitchen wastes	640,200
Construction and demolition waste	588,599
Other misc combustibles	568,168
Furniture	500,876
Other organic wastes	482,008
Newspapers and magazines	446,917



These tables show the top waste streams by quantity from the hypothetical and practical scenarios.<sup>3</sup>

The hypothetical scenario 1 identified materials which are intrinsically difficult to recycle eg:

- furniture
- DIY wastes – including wallpaper, ‘mixed bagged’ wastes
- nappies
- non-bottle plastics.

The practical scenario 2 highlights those materials that currently end up in residual waste (such as furniture and food waste) which could be removed with improved participation, capture rates and collection systems, eg source segregation to prevent contamination.

The hypothetical scenario resulted in estimated residual waste arisings of 5,364,000 tonnes and the practical scenarios resulted in arisings of 10,188,000 tonnes per annum. The difference in these arisings demonstrates the large potential for reducing residual wastes if capture rates are maximised.

Under the hypothetical scenario a recycling rate of 82.7 per cent was achieved and under the practical scenario 67.1 per cent. At the moment however, nearly 70 per cent of the UK’s waste is ending up in the residual waste stream.

# SOLUTIONS FOR YOUR AREA

## **RECYCLING COLLECTIONS**

An effective doorstep collection scheme will:

- produce high quality materials for recycling and composting
- encourage high rates of participation from householders
- capture a high proportion of recyclable and compostable waste from households.

The vast majority of studies have found that recycling our rubbish is better for the environment than incinerating or landfilling it, even if it cannot be reprocessed locally.

The best ways to maximise your doorstep collection recycling rate is to expand the scheme, collect a wide variety of materials often, and provide incentives and explain to householders what your authority is trying to achieve and how they can help.

## **HOW IS YOUR AUTHORITY DOING?**

### **1 Expand existing doorstep collections to all households**

Also, invest in reaching 'difficult' properties, eg, high-rise, high-density and remote rural homes.

Advice and case studies of high-density housing recycling schemes can be found at:

[http://www.wasteonline.org.uk/resources/WasteWatch/RecyclingFromFlats\\_DefraWW1.pdf](http://www.wasteonline.org.uk/resources/WasteWatch/RecyclingFromFlats_DefraWW1.pdf)

WRAP's report *Low Participation Areas – effective communications planning* is available at [www.wrap.org.uk/lpa](http://www.wrap.org.uk/lpa)

### **2 Collect recycling frequently – ideally weekly**

Weekly collections are more convenient for householders than fortnightly collections, as households won't need to store their materials for long.

### **3 Collect a wide range of materials**

Ideally, dry recyclable materials collected will include paper, glass, cans, plastics, cardboard, textiles and batteries. Three of the top waste streams by quantity identified in the practical scenario were kitchen waste, newspapers and magazines and cardboard boxes and containers. These should be removed from residual waste with improved segregation and collection systems.

The greater the number of materials collected, the more people are likely to participate and the greater the amount of material people will put out for collection. For example, Recoup has reported that when plastic bottle collection is added to existing recycling schemes, capture rates of other materials typically increase by 10-30 per cent.

If certain materials are excluded from the collection then an explanation for this should be given to householders and advice on the nearest sites they can be taken to should be offered.

### **4 Separate materials at the doorstep**

Recycling must be effective – the quality of recyclables affects demand, price and reliability and the lowest value markets will be the least stable. Also, bad stories about recyclables (eg going to landfill) damage public confidence in recycling.

Materials separated at the kerbside will be less contaminated than those sorted at a central material recycling facility (MRF) and will therefore require less treatment. Cleaner materials are more valuable to reprocessors and a higher proportion of these can be recycled.

Source separated systems have been found to not only significantly out-perform commingled collections on both material quality and diversion rate,<sup>4</sup> but also cost less<sup>5</sup> and have a lower carbon impact.

For example, in order to re-melt glass into new containers, a high level of purity and colour sorting are required. Mixed or crushed glass is of no use for re-melting and is usually sold much cheaper for use as aggregate, which has no climate benefit. There is a big environmental benefit to recycling glass so if possible glass should be separated by colour as it is collected.

Friends of the Earth is supporting the Campaign for Real Recycling in partnership with reprocessors and community recyclers, calling for separate collection where possible [www.realrecycling.org.uk/](http://www.realrecycling.org.uk/)

For more information on recycling collection systems please see the briefing at [www.foe.co.uk/resource/briefings/recycling\\_collections.pdf](http://www.foe.co.uk/resource/briefings/recycling_collections.pdf)

### **5 Invest in good education and customer care**

Provide a good customer care service for householders so that they are encouraged to take part in the scheme and recycle as much of their waste as possible.

It is important to be clear about what households can and cannot recycle, as well as why they should recycle. Measures should include telephone hotline service, having a dedicated web page for information, delivering leaflets or newsletters, delivering face-to-face education about the service and liaising with local schools. Once a scheme is in place it is important to continually reinforce the message with regular information about the service.



ECT Recycling

ECT staff collecting source separated recyclables

Canvassing involves face-to-face conversations with householders on their doorstep, in order to promote recycling services and encourage residents to recycle. This is a very successful technique – Devon Waste Partnership found canvassing led to a 20 per cent increase in the tonnage of recyclables collected and a 10 per cent increase in set out.<sup>6</sup>

### 6 Incentives to increase participation

Providing householders with financial incentives can increase participation and recycling rates. These should be designed to not have a disproportionate impact on any particular sectors of society. They should only be introduced when good doorstep recycling and composting services have been in place for two years and there must be effective consultation and communication with local people.

Reducing the size of the refuse container and charging more for a larger bin or extra bin bags can help to encourage people to take part in the recycling scheme. It can be easier to reduce the amount of waste that people set out if the collection scheme is not tied into using large containers, ie 240 litre wheelie bins.

Blaby District Council provides each household with a weekly collection of one 140 litre residual bin and makes a charge to residents who require larger refuse or 'side waste' sacks. In order to encourage home composting a charge is also made for green waste collections.

Details and evaluation of Defra's Household Waste Incentives Pilot Scheme can be found at:

[www.defra.gov.uk/environment/waste/localauth/encourage.htm](http://www.defra.gov.uk/environment/waste/localauth/encourage.htm)

### COMPULSORY RECYCLING

Introducing compulsory recycling is an effective measure for encouraging participation in collection schemes, and has been found to require little or no enforcement to generate good results.

Households that aren't recycling should be identified and engaged with to ensure that they understand the system. Using legislation such as the Environmental Protection Act and fixed-penalty notices fines are rarely necessary.

Several councils have successfully implemented compulsory recycling. In Barnet, recycling tonnages rose by 28 per cent in the first year of the scheme and in Harrow, compulsory recycling helped to boost dry recycling rates by 50 per cent in the first year.<sup>7</sup>

For more info on recycling see the briefing at: [www.foe.co.uk/resource/briefings/recycling.pdf](http://www.foe.co.uk/resource/briefings/recycling.pdf)

### FOOD WASTE

Kitchen wastes are one of the top waste categories by tonnage in the practical scenario calculated by EnviroCentre. This is due to the fact that food waste makes up around 20 per cent of municipal waste. The rolling out of weekly source separated collection of food waste for composting or anaerobic digestion would remove much of this material from the residual waste stream.

Separate collection of food waste for biological treatment by composting or anaerobic digestion (AD) is the best treatments for food waste and other biodegradable waste in terms of climate change. AD has the advantage of also generating 100 per cent renewable energy exclusively from the biomass portion of waste,<sup>8</sup> and it has been found to offer higher net carbon savings than composting by offsetting fossil energy generation. The new Waste Strategy for England strongly supports collecting food waste for treatment by AD.<sup>9</sup>



For more information on anaerobic digestion see:  
[www.foe.co.uk/resource/briefings/anaerobic\\_digestion.pdf](http://www.foe.co.uk/resource/briefings/anaerobic_digestion.pdf).

When householders start separating their food waste, they become more aware of the amount they are throwing out and start to minimise their waste themselves.

As well as cutting waste, increasing recycling and tackling climate change, weekly food collections also help counter criticisms of fortnightly waste collections, which largely centre around kitchen waste. Removing food waste from bins reduces the smells and vermin associated with fortnightly rubbish collections.

**Bristol was the UK's first city to offer food waste collections to all residents. When the collection was introduced the recycling rate jumped from 18 per cent to 37 per cent in one year.**

### WHY KEEP FOOD AND GARDEN WASTE SEPARATE?

Although it is cheaper to collect food and garden waste together, the overall costs may be higher. The cheapest way to treat separately collected garden waste is open air windrow composting. However, mixed food and garden waste has to be treated in an enclosed facility, which is more expensive.

Although enclosed windrow composting and in-vessel composting are suitable for treating food waste, it is best to use AD, as this will also generate 100 per cent renewable energy.

Where possible, it is preferable for people to home compost green waste, so promote home composting including free or subsidised bins or food waste digesters.

For more information on food waste collections see:  
[www.foe.co.uk/resource/briefings/food\\_waste.pdf](http://www.foe.co.uk/resource/briefings/food_waste.pdf)

### PREVENTION AND FOOD WASTE

It is important not to forget the important role that prevention can have in reducing total and residual waste volumes. Food is a good example of this, with WRAP research finding that £10 billion pounds worth of food is thrown out every year in the UK –roughly a third of everything we buy (around 6.7 million tonnes). WRAP has advice available on campaigning on food waste reduction.

For more info see:

[www.lovefoodhatewaste.com/](http://www.lovefoodhatewaste.com/)  
[www.wrap.org.uk/love\\_food\\_hate\\_waste/partners/](http://www.wrap.org.uk/love_food_hate_waste/partners/)  
[www.wrap.org.uk/retail/food\\_waste/research/the\\_food\\_we\\_waste.html](http://www.wrap.org.uk/retail/food_waste/research/the_food_we_waste.html)

WRAP has also commissioned a lot of research on dealing with food waste – see:

[www.wrap.org.uk/local\\_authorities/biowaste/index.html](http://www.wrap.org.uk/local_authorities/biowaste/index.html)

Information on WRAP's separate food waste collection trials is at:

[www.wrap.org.uk/local\\_authorities/biowaste/separate\\_food\\_waste.html](http://www.wrap.org.uk/local_authorities/biowaste/separate_food_waste.html)

### FURNITURE

Furniture was one of the top residual wastes identified in EnviroCentre's research, primarily arising via the bulky waste collection and civic amenity site systems. Furniture makes up about a third of bulky waste collections.

Significant improvements to collection systems can be achieved by implementation of best practice, including maximising the reuse and recycling of large electrical goods, furniture and other bulky wastes after collection via refurbishment and redistribution schemes. This service should ideally be free to encourage its use.

Reuse schemes are often voluntary and community sector projects supported by, or run in partnership with, local councils. Goods can be resold via an auction house, regular large-scale public sale or retail outlet. Large retail warehouses known as 'SuperSheds' and 'Trash Palaces' have been very successful in New Zealand. One of these would be particularly suitable for a county council, where items could be sent from all district bulky collections and civic amenity sites.

As a local authority, you could also make links between your reuse organisation and housing departments or registered social landlords.

The Furniture Re-use Network has published guidance on optimising the design and operation of collection systems for furniture re-use and recycling,<sup>10</sup> which describes best practice for civic amenity sites and bulky collections. See [www.frn.org.uk](http://www.frn.org.uk)

*Bulky waste collections: maximising re-use and recycling – a step-by-step guide:*

[www.frn.org.uk/pdfs/New%20Toolkit%20Jan%202006.pdf](http://www.frn.org.uk/pdfs/New%20Toolkit%20Jan%202006.pdf)



Recycle Now

### **CASE STUDY – DONCASTER RE-FURNISH**

Doncaster Re-Furnish is a social enterprise that collects furniture, electrical appliances and household goods free of charge from homes and sells them at affordable prices in two stores. They employ 20 staff, and have provided work experience and training for 420 staff, volunteers and work placements since starting in 2003. In that time they have collected 74,000 items of furniture and electrical appliances from over 33,000 households, and supplied these goods to over 8,000 families in need. The bulky household collection service is operated in partnership with Doncaster Metropolitan Borough Council and SITA UK. A joint booking system is used – non reusable items are collected by SITA for a charge. To avoid damage, householders are asked to store goods inside if possible, or otherwise under cover if left outside.

Investigate how to improve the effectiveness of collections, eg collect from inside houses rather than leaving things to get damp or damaged on the street and offer mattress recycling.

Improving your bulky waste collection service won't cost much more and the social benefits will save money across the whole authority, for example in social services and housing departments. Furniture reuse projects often create employment and training for excluded or vulnerable groups and provide affordable goods for low income individuals or families.<sup>11</sup>

### **DIY WASTE**

There is a growing trend for DIY, which generates a wide range of wastes – construction and demolition materials as well as carpet, underlay, wood, paints and varnishes. Prevention, reuse and recycling of household DIY materials could be dramatically improved by a range of simple actions on the part of local authorities. Flat glass and windows, doors, radiators, timber and building materials can all be reused or recycled, and bathroom suites, carpets and paint can be reused.

The majority of this arises through civic amenity (CA) sites. CA sites should be organised to ensure very high levels of reuse, recycling and composting, with provision of separate collection bins for all recyclable materials within CA sites to encourage good separation. Depending on waste composition, recycling rates can reach as high as 80 per cent.

Recycling and reuse rates can be greatly improved on the majority of sites without large financial outlays such as changing the layout. The keys factors are:

- improve traffic flow and positioning and ordering of bins
- introduce a system / area for reuse which collects a substantial range of items
- increase the range of segregated recyclables collected (green waste and timber make the greatest contributions to recycling rates)
- Include contract incentives / performance related bonus schemes based on recycling targets.

Communicate clearly how people should use the facilities and take advantage of the opportunity to raise public awareness of recycling:

- improve signage (quality, clarity and completeness) to encourage recycling
- employ plenty of clearly-identified and well-trained site staff to meet and greet visitors and direct them to the correct bays to recycle materials
- explain how to use the site and what happens to materials via leaflets and information boards
- provide demonstration sites for home composting
- sell compost onsite
- provide feedback to users on recycling rates achieved
- promote sites well and have good online information.

Ideally a CA site review should be undertaken to identify priority improvements, and consultants could be used to help to draw up an improvement plan eg Resource Futures – see: [www.resourcefutures.co.uk](http://www.resourcefutures.co.uk)

*National Assessment of Civic Amenity Sites*  
[www.networkrecycling.co.uk/downloadable-reports.htm](http://www.networkrecycling.co.uk/downloadable-reports.htm)

*National Assessment of Civic Amenity Sites Toolkit – a guide to increasing recycling rates at your civic amenity sites*  
[www.networkrecycling.co.uk/pdf/nacas/nacas\\_toolkit.pdf](http://www.networkrecycling.co.uk/pdf/nacas/nacas_toolkit.pdf)

### PAINT AND VARNISH

To increase paint use

- Increase the number of drop-off points and site them at convenient locations.
- Provide a local authority dedicated household hazardous waste collection system that includes paints and varnishes.
- Collect a stockpile of obsolete paints from households during a paint amnesty to ensure that these are treated properly.
- Fund additional community reuse schemes.

**Community RePaint** is a network of about 70 schemes across the UK, which provide an outlet for unwanted reusable paint while helping local communities and individuals. In 2006 the network redistributed over 208,000 litres of paint worth over £800,000 to a total of 11,000 individuals and community and voluntary groups.

The website [www.communityrepaint.org.uk](http://www.communityrepaint.org.uk) includes a post code search locator to find your nearest Community RePaint project – get in touch to ask if they can distribute paint donated to your local household waste recycling centres (for example in a custom made, walk-in skip) or drop-off points at DIY retailers.

Typically, a Community RePaint scheme costs around £3,000 per year to run. To cover these costs, most schemes operate some form of training initiative under New Deal, leading to an accredited qualification. The running of Community RePaint schemes also supports jobs and offers work training and volunteer places, eg to the long-term unemployed and people with learning disabilities.



### CASE STUDY – GREENFORD ROAD RE-USE AND RECYCLING CENTRE, EALING LONDON

This site has the second largest throughput tonnage in the UK, and recycles around half of the waste taken there. A wide range of materials can be recycled, including wood, construction and demolition waste and mobile phones. Many items such as furniture, books, CDs and small electrical goods are provided to charities to be distributed to those in need, such as families with low incomes. Half-used tins of paint are collected for schools, charities and community groups. Visitors are directed what to do with their waste by simple, colourful signs, and information sheets are available in six languages.

### WOOD

Contact wood recycling schemes in your local area to collect wood from your civic amenity sites.

The Brighton and Hove Wood Recycling Project sells on waste wood through its retail outlet for DIY, craft and firewood.

National Community Wood Recycling Project  
[www.communitywoodrecycling.org.uk/index.htm](http://www.communitywoodrecycling.org.uk/index.htm)

[www.wrap.org.uk/manufacturing/projects/wood\\_projects/index.html](http://www.wrap.org.uk/manufacturing/projects/wood_projects/index.html)

### OTHER IDEAS

Encouraging use of sustainable building and reclaimed materials will help close the loop by developing markets for reused materials.

## **NAPPIES**

Nappies make up 3-4 per cent of the residual waste stream,<sup>12</sup> and encouraging the use of reusable nappies can have tangible savings on disposal costs:<sup>13</sup>

- **Bristol City Council calculated its nappy disposal costs to be £500,000 in 2003**
- **Kent, Northamptonshire and Essex Councils estimate that dealing with nappy waste costs them over £1 million per year**
- **Gloucestershire believes its nappy disposal costs to be £300,000 per year**

Set up a real nappy scheme, increase public awareness and encourage behavioural change through involvement of midwives and health visitors in the campaigns.

The WRAP Real Nappy Helpline – 0845 850 0606

[www.realnappycampaign.com](http://www.realnappycampaign.com) includes a resource pack for local authorities and best practice guidelines to setting up your own real nappy scheme.

### **CASE STUDY – ENFIELD'S WIPE OUT WASTE CAMPAIGN INCLUDED:**<sup>14</sup>

- a Shoppers Guide – with a six-point plan to low-waste purchasing
- a Local Services guide to hire, repair, trade-in and donation – with a six-point plan and a high street guide to appropriate businesses
- an At Home guide – focusing on durability, DIY and repair, home composting and junk mail
- a Waste Doctor service – a volunteer would make home visits to help answer people's waste queries, for example, in relation to home composting.

## **HERE'S SOME MORE IDEAS:**

- remove recyclable materials from street waste and put recycling facilities on the street and in parks
- increase provision of local bring banks, especially for colour separated glass and materials not collected at the kerbside
- hold regular give and take days for people to exchange goods they no longer need
- run school-based awareness initiatives.

Produce a residents' handbook, webpages, leaflets or posters promoting waste, repair, recycling and reuse systems, including:

- encouraging householders to recycle their old electrical and electronic equipment via civic amenity sites, collection services and new take-back facilities provided by retailers
- information on exchange schemes such as 'Freecycle'
- encouraging donation of unwanted items to charity shops
- details of reclamation yards and local projects that recondition goods, like furniture, bikes and electronic equipment
- promotion of refillable schemes, repair services (eg jewellery), hire schemes for tools, toy libraries etc
- information on local farmers markets and box delivery schemes
- help tackling unwanted mail via the Mailing Preference Service and 'no junk mail' stickers
- how to find out where you can recycle items that are not collected ([www.recycle-more.co.uk](http://www.recycle-more.co.uk)) eg mobile phones, repaint schemes, woodbanks
- promotion of energy saving light bulbs and other longer-life products
- details of milk delivery services to increase use of returnable bottles – see [www.findmeamilkman.net](http://www.findmeamilkman.net)



Composting of residual waste at New Earth Solutions' MBT facility in Dorset, which diverts over 80 per cent of biodegradable municipal waste from landfill

### **REMOVING MORE RECYCLABLES FROM THE RESIDUAL WASTE STREAM**

By implementing the systems described in this report, the amount of residual waste collected by councils will reduce significantly. The problem is that even after implementing the best practice services outlined above, there will still be some recyclable materials left in the residual waste that is collected.

A well designed mechanical biological treatment (MBT) technology can be used to maximise the removal of any recyclable materials remaining in the waste stream.

MBT plants should be designed to maximise removal of recyclable materials, including metals, mixed plastics, paper, glass, card and textiles by combining a number of screening and sorting techniques.

An effective MBT technology also removes most of the biological activity of the waste, stabilising it so that it can be landfilled without releasing significant amounts of methane.

Landfilling the MBT residue will not count towards Landfill Allowance Trading Scheme (LATS) targets for landfilled biodegradable municipal waste, as long as the biological activity has been reduced sufficiently to meet Environment Agency requirements.

If the residue is clean enough it may also be usable for low-grade soil, eg for land reclamation on brownfield sites, landfill restoration or as a soil additive.

For example, Leicestershire County Council has awarded a waste treatment contract to Lafarge Aggregates, to build an MBT plant to meet its 2009/10 and 2012/13 landfill diversion targets. It will employ technology provided by New Earth Solutions with the organic end product being used to restore a landfill site.

Research has clearly shown that, even if the residue is landfilled, this is better for the climate than incineration (including incineration with heat recovery).<sup>15</sup>

Friends of the Earth does not support burning the residue either as a Refuse Derived Fuel or Solid Recovered Fuel.

If MBT is not used for the treatment of residual waste, the alternative is to process all waste through a materials recovery facility (MRF) to remove as many recyclables from the waste stream as possible. MRFs typically recover around 10 – 15 per cent of material as recyclables from residual waste.

# THINKING AHEAD

The good news is that waste arisings are stabilising. The average annual increase in municipal waste from 2001/02 to 2006/07 was 0.2 per cent.<sup>16</sup> Total municipal waste changed little in the year to end September 2007, decreasing from 29.1 million tonnes to 29.0 million tonnes, or 0.3 per cent.<sup>17</sup> A similar small decrease in total household waste was observed, from 25.8 to 25.7 million tonnes.

With overall municipal waste volumes stabilising or beginning to fall, ongoing increases in recycling rates and the opportunities for further reducing residual waste through policy changes, it is vital that local authorities plan for reducing amounts of residual waste, and for flexible technologies that can adjust to changes in volume and composition of this waste.

This approach is backed by the English Waste Strategy 2007<sup>9</sup>, where the government emphasise the need for “flexible – eg modular buildings, and also flexible contracts, which do not lock in fixed amounts of waste for treatment which might become obsolete.”

Some technologies are inherently inflexible (eg incineration) whilst others can be flexible and modular, with modules that can be converted to composting and general recycling (eg, some MBT technologies) allowing capacity to be adjusted to meet demand.

Despite the evidence on stabilising growth rates and the potential to increase recycling, many new large waste treatment facilities including incinerators are being built based on unambitious projections of future recycling rates and waste growth. We need to avoid costly new waste infrastructure with long contracts constraining our future flexibility in dealing with waste.

It is sometimes claimed that incinerators can cope with reducing amounts of residual municipal waste because there is lots of commercial and industrial waste available. But this ignores the much higher recyclability of these waste streams, and the strong climate and resource efficiency rationale to get these waste streams reused, recycled and composted.

## **FURTHER INFO**

*Mechanical biological treatment* briefing  
[www.foe.co.uk/resource/briefings/mchnical\\_biolo\\_treatmnt.pdf](http://www.foe.co.uk/resource/briefings/mchnical_biolo_treatmnt.pdf)

*Dirty Truths* briefing – summarising the findings of A Changing Climate for Energy from Waste  
[www.foe.co.uk/resource/briefings/dirty\\_truths.pdf](http://www.foe.co.uk/resource/briefings/dirty_truths.pdf)

*Up in Smoke* briefing – why Friends of the Earth opposes incineration  
[www.foe.co.uk/resource/media\\_briefing/up\\_in\\_smoke.pdf](http://www.foe.co.uk/resource/media_briefing/up_in_smoke.pdf)

## **HOW GOVERNMENT COULD HELP**

There are a number of measures that government should introduce

- Higher targets for packaging recovery notes (PRNs).
- The power (but not requirement) for local authorities to introduce variable household charging once doorstep systems are in place. This could take the form of discounts on council tax, financial incentives and reward schemes, or direct and variable charging.
- Producer responsibility and eco-design requirements to make products more recyclable and reusable.
- Cutting landfill tax on stabilised MBT residues, and introducing an incineration tax.

# SUMMARY: HOW TO DEAL WITH RESIDUAL WASTE IN THE FUTURE

1. Improve doorstep recycling services, ideally source separating materials at the kerbside.
2. Introduce weekly collections of food waste to all households.
3. Maximise reuse and recycling of furniture and other items from bulky waste collections.
4. Ensure civic amenity sites are set up to recycle and reuse all possible materials, including DIY waste.
5. Promote reusable nappies and other waste prevention, recycling and composting initiatives.
6. To deal with residual waste, use MBT to remove as many recyclables as possible, including plastics.
7. Finally compost or anaerobically digest the remaining waste prior to landfill or low-grade land treatment.

## MORE INFO

### WRAP AND RECYCLE NOW

WRAP's website at

[www.wrap.org.uk/local\\_authorities/index.html](http://www.wrap.org.uk/local_authorities/index.html)

has useful resources and information on recycling, including funding, training, toolkits & good practice.

WRAP can provide information and support to local authorities on improving bulky waste collections, kerbside recycling collections and civic amenity sites.

WRAP runs Rotate, an advisory service on collection programmes and local communications, and also promotes recycling and resource efficiency in business, manufacturing, retail and construction.

WRAP also aims to increase the level of public participation in recycling and runs the Recycle Now campaign, working closely with councils, retailers and other organisations to make sure the recycling message is heard – see [www.recyclenow.com/](http://www.recyclenow.com/)

The Recycle Now Partners website at [www.recyclenowpartners.org.uk/index.html](http://www.recyclenowpartners.org.uk/index.html) offers many resources for local authorities, for example on developing recycling communications campaigns.

### NRWF HOUSEHOLD WASTE PREVENTION TOOLKIT

[www.wrap.org.uk/local\\_authorities/toolkits\\_good\\_practice/nrwf\\_household\\_waste\\_prevention\\_toolkit/index.html](http://www.wrap.org.uk/local_authorities/toolkits_good_practice/nrwf_household_waste_prevention_toolkit/index.html)

### WASTE PREVENTION & RE-USE INFORMATION SHEET

[www.defra.gov.uk/environment/waste/localauth/practice-guidance/pdf/infosheet10.pdf](http://www.defra.gov.uk/environment/waste/localauth/practice-guidance/pdf/infosheet10.pdf)

### WASTE INFORMATION NETWORK

Resources on guidance and good practice for local authorities

[www.win.org.uk/ce\\_guidance.aspx](http://www.win.org.uk/ce_guidance.aspx)

Friends of the Earth's free booklet *What we can do about Waste* explains how we can reduce our waste, and how recycling can help the environment, save resources and energy and generate jobs. It is available online at [www.foe.co.uk/resource/briefings/waste\\_and\\_recycling\\_booklet.pdf](http://www.foe.co.uk/resource/briefings/waste_and_recycling_booklet.pdf)

or to order at [www.foe.co.uk/shop/index.php?main\\_page=product\\_book\\_info&cPath=1\\_4&products\\_id=85](http://www.foe.co.uk/shop/index.php?main_page=product_book_info&cPath=1_4&products_id=85)

*Save Cash & Save the Planet* – this guide has chapters including top tips and real life examples for reducing your impact on the Earth's resources – and saving cash into the bargain. It is available at

[www.foe.co.uk/shop/index.php?main\\_page=product\\_book\\_info&cPath=1\\_10&products\\_id=10](http://www.foe.co.uk/shop/index.php?main_page=product_book_info&cPath=1_10&products_id=10)

# REFERENCES

- 1 WRAP, 2006, *Environmental benefits of recycling: an international review of life cycle comparisons for key materials in the UK recycling sector*, [www.wrap.org.uk/wrap\\_corporate/about\\_wrap/what\\_does\\_wrap\\_do/environmental.html](http://www.wrap.org.uk/wrap_corporate/about_wrap/what_does_wrap_do/environmental.html)
- 2 J Renner/Worldwatch, 1991, *Jobs in a sustainable economy*. Cited in Friends of the Earth, 1994, "Working Future"
- 3 EnviroCentre, 2007, *Residual waste phase 1 report*, [www.foe.co.uk/resource/reports/residual\\_waste.pdf](http://www.foe.co.uk/resource/reports/residual_waste.pdf)
- 4 Campaign for Real Recycling, press release "Commingling myth debunked" 13/08/2007, [www.realrecycling.org.uk/news/news6.php](http://www.realrecycling.org.uk/news/news6.php)
- 5 WRAP research comparing costs of collection systems, 2008 [www.wrap.org.uk/wrap\\_corporate/news/wrap\\_reveals\\_results.html](http://www.wrap.org.uk/wrap_corporate/news/wrap_reveals_results.html)
- 6 WRAP, *Step-by-step guide to door-to-door canvassing*, [www.wrap.org.uk/local\\_authorities/toolkits\\_good\\_practice/guide\\_to.html](http://www.wrap.org.uk/local_authorities/toolkits_good_practice/guide_to.html)
- 7 Letsrecycle.com, 26/02/2008, "Councils hail 'magic' of compulsory recycling", [www.letsrecycle.com/do/ecco.py/view\\_item?listid=37&listcatid=321&listitemid=9730](http://www.letsrecycle.com/do/ecco.py/view_item?listid=37&listcatid=321&listitemid=9730)
- 8 Friends of the Earth, 2006, *Dirty truths: incineration and climate change* [www.foe.co.uk/resource/briefings/dirty\\_truths.pdf](http://www.foe.co.uk/resource/briefings/dirty_truths.pdf)
- 9 DEFRA, 2007, *Waste strategy for England 2007*, [www.defra.gov.uk/environment/waste/strategy/](http://www.defra.gov.uk/environment/waste/strategy/)
- 10 FRN, 2006, *Bulky basics: a guide to partnerships, policies and procedures to maximise re-use from bulky household waste*
- 11 LGA, 2004, *10 Easy ways to prevent waste*
- 12 The Nappy Alliance, 2007, policy briefing, [www.parliament.uk/documents/upload/st1NappyAlliance.pdf](http://www.parliament.uk/documents/upload/st1NappyAlliance.pdf)
- 13 Real nappies presentation, [www.realnappycampaign.com/for\\_las\\_and\\_networks/resource\\_pack.html](http://www.realnappycampaign.com/for_las_and_networks/resource_pack.html)
- 14 London Borough of Enfield, Waste Recycling Plan 2004–2006
- 15 Eunomia (consultants for Friends of the Earth), 2006, *A changing climate for energy from waste?*, [www.foe.co.uk/resource/reports/changing\\_climate.pdf](http://www.foe.co.uk/resource/reports/changing_climate.pdf)
- 16 Defra, 06/11/2007, statistical release "Municipal waste management statistics 2006/07" [www.defra.gov.uk/news/2007/071106a.htm](http://www.defra.gov.uk/news/2007/071106a.htm)
- 17 Defra, 08/05/2008, statistical release "Municipal waste management statistics provisional quarter 2 2007/08" [www.defra.gov.uk/news/2008/080508a.htm](http://www.defra.gov.uk/news/2008/080508a.htm)

## **SORTING RESIDUAL WASTE:**

### **A GUIDE FOR COUNCILS TO SAVE MONEY**

### **AND HELP THE ENVIRONMENT BY**

### **CUTTING BACK ON RESIDUAL WASTE**

Residual waste – the waste that isn't prevented, reused, recycled or composted – is both an environmental problem and a practical one for local authorities. From an environmental point of view material in residual waste is literally wasted as the potential for re-use of any resources is lost. From a practical point of view residual waste also needs to be dealt with. If it is biodegradable then municipal residual waste needs to be diverted from landfill in order to reduce climate change impacts and meet Landfill Directive targets.

Friends of the Earth commissioned research to find out what are the main materials and products getting into residual waste, and to identify the policy measures that could be used to get them out. The largest streams to tackle include food waste, furniture and DIY wastes.

This briefing, *Sorting Residual Waste*, addresses policies that can be undertaken at a local level, focusing particularly on

- (i) Maximising recycling rates, including maximising participation.
- (ii) Providing effective food waste collection.
- (iii) Using civic amenity sites to recycle DIY and other wastes.
- (iv) Improving bulky waste collections in a bid to maximise re-use of furniture.



**Friends of  
the Earth**

**Making life better for people by inspiring solutions to environmental problems**

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