

Waste and Resource Management Strategy for Devon Review



March 2013

Don't let Devon go to waste



Contents

Prologue	3
1 Scope	4
2 Background	5
3 What has been achieved	6
4 Government Strategy	8
5 Legislation	10
6 Growth, performance predictions and targets	11
7 Waste prevention	15
8 Reuse and Community Sector activities	18
9 Recycling	21
10 Organic waste	24
11 Residual waste	26
12 Behavioural change, Community engagement and schools	28
13 Partnerships	29
14 Redundant landfill sites	31
15 Commercial waste	32
Appendices	34

Supplementary documents

Communications Strategy

Waste Education Strategy for schools

Waste Prevention and Reuse Strategy – to be developed



Prologue

For many years, waste has been thought of as just that, waste. Consequently in the UK the solution to waste management has most often been to bury it.

Conveniently, the UK geology and topography has enabled significant amounts of landfill to be carried out at very low cost for many years. Unfortunately when organic waste is landfilled its decomposition releases methane and carbon dioxide which are both potent greenhouse gases contributing 4% of the UK's global warming emissions. Although modern landfills are constructed to enable collection of these gases and convert them to electricity, some gases still escape to the air and the energy conversion is inefficient. In order to tackle this problem the European Commission introduced the Landfill Directive to drive the management of waste towards more sustainable methods in line with the waste hierarchy.

With growth stabilising at 0%, a 55% recycling rate in 2011/12 and two Energy from Waste plants due to be operational by 2014, Devon is well placed to reduce its Local Authority Collected Waste (LACW) landfilled to 12% by 2015. However, there is likely to be more pressure to further reduce biodegradable waste landfilled to zero in the future either due to legislation or fiscal interventions.

In recent years there has been more emphasis on treating waste as a resource and there should be no opportunity missed in aiming to ensure that the "waste" industry becomes a supplier of quality materials and efficient energy helping towards security of material and energy supply.

The review of the Joint Municipal Waste Strategy for Devon has considered this shift to treating waste as a resource and takes on a new title, acknowledging that the majority of waste can indeed become a valuable resource.

The key to the strategy review is the waste hierarchy with a focus on further advances in waste reduction, re-use and recycling leading to reduced carbon impact and a more sustainable waste management regime in future years.

Work in progress

Following the consultation, supplementary documents are work in progress and will be developed during 2013. These include

- Waste Prevention & Reuse Strategy
- Communications Strategy
- Energy potential and alternative technologies
- Carbon Impact & LCA
- Economical analysis and;
- An action plan will be produced and reviewed on a regular basis

Further information

For further information contact: Annette Dentith at the address above; by email at Annette.dentith@devon.gov.uk or by phone on 01392 383190.

If you require a big print copy or copy in a language other than English, please contact: Annette Dentith

1. Scope

This document represents a review of the current Joint Municipal Waste Management Strategy for Devon, updating it in terms of progress, statistics, legislation, targets and policies. Areas that will be considered in greater depth than they were in the previous strategy are waste prevention and reuse community engagement, carbon impact and Life Cycle Analysis, and the issue of integrated working. A Communications Strategy will be incorporated, as will an Education Strategy and a Waste Prevention Strategy. Elements of this are work in progress and will be identified in an Action Plan.

The County Council, as Waste Disposal Authority (WDA) is responsible for dealing with Municipal Waste management which incorporates domestic and low level clinical waste from households, waste collected from some commercial sources, litter and fly tipping. Throughout this document reference will be made to Municipal Waste, Local Authority Collected Waste and Household Waste. Definitions can be found in the glossary. The WDAs and District Councils as Waste Collection Authorities (WCAs) are not responsible for Commercial and Industrial (C&I) waste that they have not been requested to collect. As a general rule this is collected by private companies. However, the government is keen for Local Authorities (LAs) to develop improved methods of assisting businesses, particularly Small and Medium Enterprises (SMEs), to improve their waste management so this will be taken into account in the Strategy Review. Construction and Demolition (C&D), agricultural, nuclear and quarrying waste are outside the scope of this strategy.

The Waste and Resource Management Strategy is concerned with HOW waste is dealt with in Devon. The County Council is also the Waste Planning Authority and as such has been responsible for publishing the Waste Local Plan. This is due to be superseded in 2013 by the Waste Core Strategy. This is a land use planning document identifying WHERE suitable sites for waste and resource management facilities might be located, subject to proposals meeting certain criteria. See www.devon.gov.uk and Appendix 2.

The review has been carried out jointly by the local authorities of Devon. Plymouth and Torbay Unitary Authorities are obliged to develop their own strategies. However, given their proximity to Devon, the benefits of cross border working, the South West Devon Waste Partnership (SWDWP), the long established partnerships and historical governance arrangements, the Unitary Councils' waste management aspirations will associate closely with Devon's and hence those authorities have been party to the review of the strategy.

Despite the demise of the Regional Development Agency (RDA) it is important that Devon's waste management is not considered in isolation. Consideration will therefore be given to Devon's waste management in a regional context.

The Strategy review looks forward to 2035. Given the need for a strategy looking so far forward (in relation to large scale capital projects notably the proposed Energy from Waste plants) more detailed attention is given to the first 10 years, and in so far as is possible the strategy will remain flexible in its outlook.

2. Background

The Waste and Emissions Trading Act (WET Act) 2003 states that WDAs are required to produce a Joint Municipal Waste Management Strategy (JMWMS) and to review it at least every 5 years. Devon County Council (DCC) in partnership with the District Authorities published a JMWMS in March 2005. In 2009 DEFRA wrote to Waste Disposal Authorities (WDA) informing them that due to various changes to government assessments such as Comprehensive Performance Assessment they would be consulting on whether JMWMSs should remain statutory and that in the meantime WDAs could postpone reviews if they wished. DCC have postponed, initially expecting the government to have reached a decision during 2010/11, however, none has been forthcoming and due to significant changes in waste arisings, legislative changes and the need for an up to date relevant strategy to inform future sustainable waste management in Devon, the decision was taken to refresh the strategy without further delay.

It also reviews the following areas:

- Funding/Costs
- Redundant landfill sites
- Waste Core Strategy (Land use planning document)
- Community engagement including schools work
- Waste prevention and reuse
- Communications
- Commercial waste

Objectives

- To establish what has been achieved since 2005
- To review any changes in legislation since 2005 and looking forward to ensure compliance
- To acknowledge European and Government Strategy changes and direction and ensure compliance
- To review partnership working arrangements with District and Unitary councils
- To review waste tonnages and set targets for Devon for the future
- To establish how the Devon Authorities will approach the various elements of the waste hierarchy over the strategy period
- To confirm the relevance of the strategy policies, and amend and add new ones if appropriate

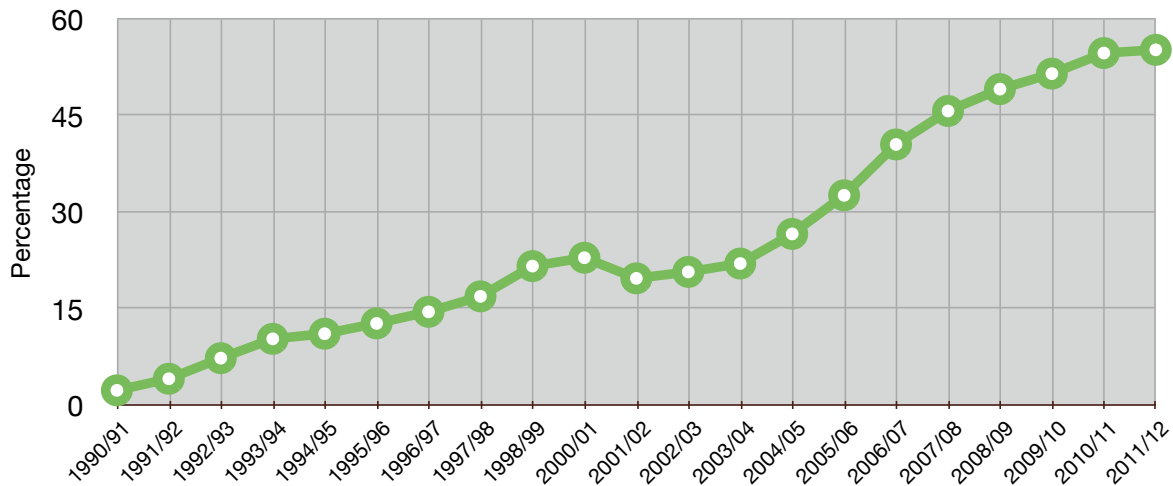
3. Where are we now, what have we achieved since 2005?

Across Devon

The total amount of household waste has actually reduced from 374,647 tonnes in 2004/5 to 354,647t in 2011/12. Targets set by either government or by Devon Authorities have been achieved and exceeded as described in the table below. Results achieved are in brackets. All figures are percentages. In 2004/5 the household recycling rate across the county

was 32.71%. In 2011/12 the recycling rate was 55.3% and Devon was the top recycling county in the country. In terms of household waste sent to landfill this has reduced from 253,407t in 2004/5 to 158,558t in 2011/12 (60% reduction). In terms of Local Authority Collected Waste (formerly Municipal Waste) the amount of waste landfilled has reduced by 98,950t (58%).

Graph 1. Recycling Rate in Devon 1990 to 2010



Graph 2. Local Authority Collected Waste Land filled Devon

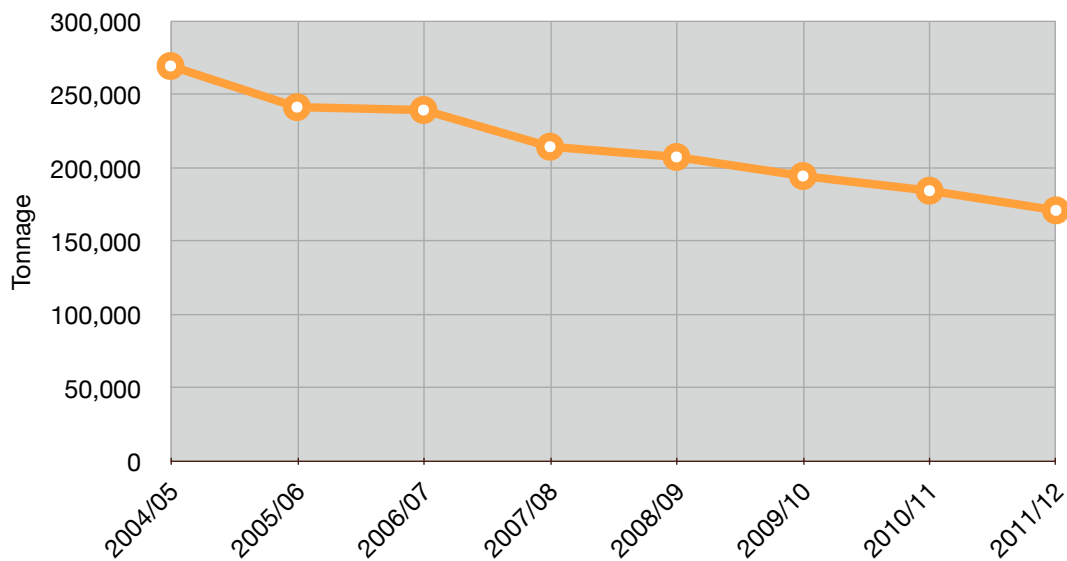


Table 1 Achievements since 2005

	2005/6	2009/10	10/11	11/12	2013	14/15	15/16	19/20	25/26
Government recycling targets set in 2007	30% (40.6%)	40% (52.5%)							
LATS BMW allocation		156,679t (133,376t)			104,359t				
Government recovery targets 2007	40% (40.6%)		45% (54.8%)	(55.3%)			67%		
Devon Strategy 2005 recycling targets	30% (40.6%)	40% (52.5%)				50%		60%	65%

In terms of growth of waste arisings, the amount of Municipal Solid Waste predicted in the 2005 Strategy for 2009/10 was 455,200t but was actually 419,137t, 36,000 fewer tonnes (8.6% less). This is good news but shows how difficult it is to predict future waste quantities.

These results have been achieved through a broad range of initiatives including:

- the Devon Authorities Waste Reduction and Recycling Committee (DAWRRC) partnership, for example joint contracts and contributions to community led initiatives;
- through roll outs of district kerbside collections of recyclables and organics;
- through the 2003/04 recycling centre target based contract and provision of new recycling centre infrastructure;
- the provision of 3 In Vessel Composting Plants and contracts with merchant Anaerobic Digestion plants
- through Don't let Devon go to waste behavioural change campaign and waste education in schools
- residents of Devon managing their waste in a more effective and environmentally sustainable manner, and

- more recently as a consequence of the economic downturn where people are not throwing so much away as they might and are purchasing fewer consumables

More detail of these initiatives will be covered in the relevant chapters.

Waste seems to be inextricably linked to economic prosperity and whilst the Government would like to see the decoupling of waste from the economic growth, there is little doubt too that the economic downturn in the latter years since the 2005 Strategy was published has had an effect on reducing the amount of Local Authority Collected Waste produced across the County.

The table overpage shows the individual recycling rates prior to the 2005 Strategy being published, and the current rates. The recycling rates vary each year from authority to authority depending on when new initiatives are brought into place. The collection of organic waste for composting for example has made a significant impact as has the introduction of new dry recyclable kerbside collection regimes.

Table 2 Recycling rate improvements

Authority	2004/5	2011/12
East Devon	16.40%	48.5%
Exeter	20.74%	36.2%
Mid Devon	17.76%	49.2%
North Devon	22.08%	44.6%
South Hams	24.64%	54.8%
Teignbridge	26.92%	57.3%
Torridge	24.42%	43.6%
West Devon	28.60%	59.9%
Devon County Household Waste Recycling Centres	61.27%	77.7%
Devon Total	32.71%	55.3%
Plymouth	16.54%	32.2%
Torbay	21.93%	42.7%

Notes:

The Community sector contributes 3% to the Devon recycling rate. This is included in the Devon total. The Devon total is an amalgamation of district and county council contributions to recycling.

The Household Waste Recycling Centres (HWRC) receive approximately 33% of Devon householders' waste hence the high recycling rate not having a greater impact on the overall recycling rate.

4. Government Strategy

Previous governments and therefore local authorities have been very target and enforcement lead in the field of waste management. Since coming into government the Coalition have reviewed the previous government's strategy in their document "Government Review of Waste Policy in England 2011" (<http://www.defra.gov.uk/publications/2011/06/14/pb13540-waste-review/>) and identified their key objective which is to develop a zero waste economy where every effort is made to make efficient use of waste. It is very much a work in progress with more policies, programmes and advice to come. The current progress report can be found at: <http://www.defra.gov.uk/publications/2012/03/27/pb13738-waste-review-progress/> The headline issues are grouped below in brief.

Voluntary agreements with Local Authorities (LAs) and in relation to Small and Medium Enterprises (SMEs)

The Government is in favour of voluntary deals and commitments rather than regulation with respect to reducing and recycling business waste and is proposing the following:

- Councils will be encouraged to sign up to a Recycling and Waste Services Commitment and government will challenge those who do not
- There will be voluntary responsibility deals with businesses to drive waste reduction, reuse and recycling
- There will be a voluntary responsibility deal for the Waste Management industry for SME recycling
- SMEs will have easier access to cost effective recycling services
- Government will work with LAs on a Business Waste Commitment to develop recycling for SMEs
- Packaging will be reduced through voluntary methods and regulation
- "Recycle on the go" (i.e. in outdoor, out of the home locations) will grow, particularly for businesses e.g. leisure centres
- Enforcement policies will be applied to businesses but no unnecessary burdens will be created
- LAs will be expected to consider whether Household Waste Recycling Centres and bring banks could be adapted for affordable business use

Waste streams, targets and measurements

The Government has reduced the number of waste management targets for local authorities to simply those relating to the EU revised Waste Framework Directive (rWFD) and the Landfill Directive, but is considering further landfill bans. They will monitor performance with Waste and Resources Action Programme (WRAP). Proposals are as follows:

- Waste streams with high embedded carbon (food, metals, plastics, textiles) and those with high direct carbon impacts through landfill emissions (food, paper, card, textiles, wood) will be targeted
- The long term vision for food waste will be to i) reduce food waste, ii) send this type of waste to renewable energy recovery e.g. Anaerobic Digestion, and iii) potentially to send no food waste to landfill
- Government was due to consult in 2012 on whether wood waste should continue to be landfilled in 2012 and would then consult on textiles and biodegradable waste
- Life Cycle Analysis and carbon impact measurement of waste treatments will be preferred to weight based measurements
- Weekly (not fortnightly) collections of odorous waste will be encouraged
- Government will adopt the European Union (EU) target of 50% of waste from households to be recycled by 2020
- Government will abolish the Landfill Allowance Trading Scheme (LATS) in 2013 along with some other data sets and targets
- There will be some new targets including producer responsibility targets, raw materials used and waste produced per unit Gross Value Added (GVA).
- WRAP will conduct an annual update of performance benchmarks for recycling schemes, develop a new measure of customer satisfaction or service quality for the Recycling and Waste Services Commitment and analyse the cost of LA waste management per house hold. It will monitor levels of GVA and employment in the repair, maintenance and recycling sectors.

Waste reduction and reuse

At the top of the waste hierarchy is waste prevention. Through the rWFD it is now a statutory requirement to follow the waste hierarchy when considering waste. The Government will:

- Establish a Waste Prevention Programme (including how households could be rewarded for effectively preventing or using waste) and a Resource Efficiency Programme by December 2013
- Promote resource efficient product design
- Consider action on single use carrier bags
- Not promote a deposit back system
- Research an Opt out process for direct mail
- Establish with LAs and Civic Society opportunities for reuse at HWRCs and creation of a database of repair and reuse services for consumers and businesses

Energy from waste

The Government is keen that energy is recovered from waste to reduce reliance on fossil fuels, reduce greenhouse emissions and contribute to energy security and carbon reduction targets. It proposes the following:

- Government supports efficient energy recovery and will aim to remove barriers and provide incentives
- Government will produce a guide to Energy from Waste technologies
- Government advice will be provided on science and technology, data and treatment capacity
- Local communities will benefit from hosting waste infrastructure
- Energy recovery needs to be more efficient and have the flexibility to adapt to changing feed stocks and technology mix and innovation
- Bio-energy and energy from waste demonstration programmes are proposed
- Combined Heat and Power (CHP) is to be encouraged
- The government will establish a clear position on health implications of energy from waste technologies

Rewards/incentives/tax

The Government favours reward over penalties when looking to guide householders to reduce their waste. Proposals are as follows:

- Government will consider taxes in waste policy that can support the implementation of the waste hierarchy

- Government will repeal the “charging for waste” (pay as you throw) power to enable reward
- Grant fund for innovative reward and recognition schemes will be made available for LAs, civic society and community groups. A toolkit for communities will be developed including ideas, best practice and promotional material, with gold, silver and bronze awards to be gained.

Miscellaneous

There are a number of other measures the Government is looking at to ensure the UK carries out sustainable waste management, as follows:

- Government will aim to remove barriers to participation by Big Society
- Powers of entry to properties to inspect waste will be repealed
- Government will work with LAs on efficiencies – better procurement, shared services and combined decision making
- Government will work with community composting sector on regulatory requirements
- Landfill – Government will encourage methane extraction from redundant sites
- Government will promote “love where you live” litter campaign with Big Tidy Up

Future plans

- o The review of Devon’s Strategy will take on board these government ambitions where appropriate and the authorities will work with the Government to develop them further.

5. Legislation

Over the past 40 years, EU waste policy has increasingly influenced our National approach to more sustainable waste management practice.

European Union Legislation

‘**Europe 2020 Strategy**’ provides a central plan for EU growth until 2020. Within this *Sustainable Growth* will be delivered via a ‘Roadmap to a **Resource Efficient Europe**’, adopted in late 2011. This identifies Europe’s ambition to become a *recycling society*’ and aims to empower consumers to move to resource-efficient consumption. The roadmap contains a vision;

By 2020, waste is managed as a resource. Waste generated per capita is in absolute decline. Recycling and re-use of waste are economically attractive options for public and private actors due to widespread separate collection and the development of functional markets for secondary raw materials.

More materials, including materials having a significant impact on the environment and critical raw materials, are recycled. Waste legislation is fully implemented. Illegal shipments of waste have been eradicated. Energy recovery is limited to non recyclable materials, landfilling is virtually eliminated and high quality recycling is ensured.

Since 1990, waste reduction and recycling targets have also been introduced, along with binding obligations on how to treat waste. Since then policies have lead to:

- Improvements and simplification of waste legislation.
- Reductions in the hazardous nature of some waste streams.
- New targets for collection and recycling.
- A reinforcement of the waste hierarchy with increased focus toward *waste prevention*.

National Policy

England’s Waste Strategy 2000 was updated in 2007. Following a change of Government in 2011, the 2007 Strategy was subsequently reviewed and a new strategy ‘**Government Review of Waste Policy in England 2011**’ and associated **Action Plan** now forms England’s strategic view toward the management of municipal, commercial and industrial waste.

The review does not introduce any National recycling targets however EU targets identified in the *Landfill*

Directive, Waste Framework Directive and specific Producer Responsibility legislation remain.

In line with the revised Waste Framework Directive, an emphasis on moving waste up the hierarchy is reinforced in the review and wastes with a high carbon impact will be targeted, such as food, metal, textiles card and plastics.

By 2013, England will have produced a Waste Prevention Programme and developed a range of behavioural change mechanisms to tackle recycling, litter and fly tipping.

Despite ongoing efforts to simplify and consolidate existing waste legislation, there remains a plethora of Regulations, Directives, Decisions and Acts relating to the waste industry.

Appendix 10 contains a summary of the most significant EU and National legislation and identifies the current legislative drivers affecting the industry.

Future plans

- o The Devon Authorities will comply with any relevant legislation and contribute, where appropriate, to meeting European and UK waste related targets.

6. Growth, performance, targets

The rate of waste growth is very difficult to predict. It is related to economic prosperity, to the number of households in an area, to demographics and to the impact of campaign work and local authority policies. Table 3 below (and graph 3) shows the actual growth rates and predictions made in 2004/05 and looking forward to 2016. The predicted growth rates have been based on assessments of Bank of England growth predictions, proposals for house building in Devon and recent trends.

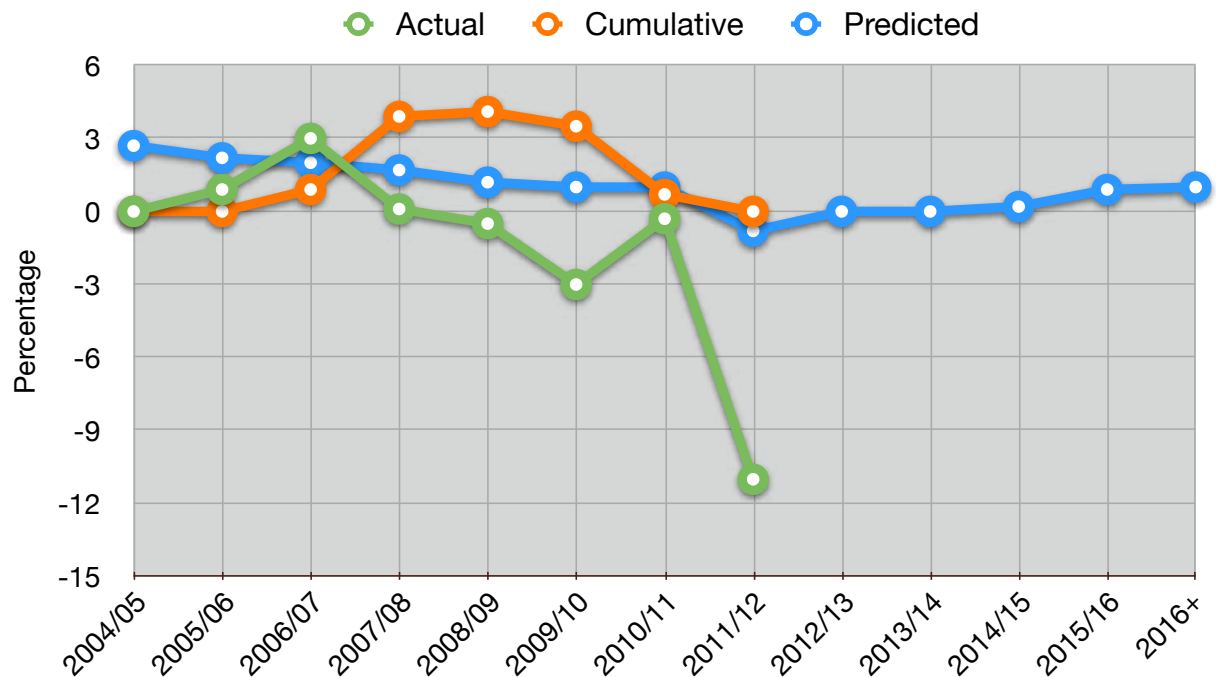
Kilogrammes of waste produced per person is at an all time low since the authorities began measuring this indicator and the current period of austerity should be seen as an opportunity to decouple waste growth from economic growth by reinforcing the environmental benefits of using fewer resources, the savings to be made by practising waste prevention and the social advantages in practising reuse. This applies both to household waste and to commercial and industrial waste where the benefits to the bottom line and to the company's environmental credentials should be particularly evident if waste is prevented.

Table 3 Predicted and actual growth rates

Year	Predicted	Actual
2004/5 - 5/6	2.3	0.8
2005/6 - 6/7	2.0	3.8
2006/7 - 7/8	1.6	1.3
2007/8 - 8/9	1.3	-1.9
2008/9 - 9/10	1.0	-2.5
2009/10 - 10/11	1.0	-0.3
2010/11 - 11/12	0.3	-10.9
2011/12 - 12/13	1	
2012/13 - 13/14	0	
2013/14 - 14/15	0.25	
2014/15 - 15/16	0.75	
2016 onwards	1	

The 10/11 - 11/12 drop of 10.9% highlights the unpredictability. It is thought that an element of this reduction is due to charging for some wastes at Household Waste recycling centres.

Graph 3 Predicted and actual growth rates



12

At present the estimated Baseline (most likely) scenario proposed for Devon assumes 0% growth. Pessimistic and optimistic scenarios assume higher and lower growth rates respectively which may emerge depending on the economic position and also as a result of the work of the local authorities in assisting householders to reduce their waste through education campaigns. The scenarios are shown in Appendix 1.

Alongside the predicted growth rates the LAs have made predictions regarding the recycling rates they estimate they will achieve over the life of the Strategy. Achievement of these aspirational targets will depend on a number of external factors as well as planned improvements to services. The aspirational household waste recycling rates are shown overpage.

Column 2 and 3 figures are audited, columns 4-7 cover the next 4 years, and columns 8-10 cover the following 15 years.

Table 4: Aspirational Household waste recycling rates

Authority	10/11	11/12	12/13	13/14	14/15	15/16	19/20	25/26	29/30
East Devon	48.4	48.5	55	60	62	62	63	64	65
Exeter	37.2	36.2	38	38	39	40	40	40	40
Mid Devon	48.9	49.2	49	49	50	50	60	65	65
North Devon	44.4	44.6	48	50	52	55	60	65	65
South Hams	54.9	54.8	55	56	60	60	60	64	65
Teignbridge	57.1	57.3	59.5	60	60.5	61	63	65	65
Torridge	44.1	43.6	47	48	49	50	52	55	57
West Devon	51.6	59.9	60	60	60	60	65	65	65
Devon HWRCs	73	77.7	75	76	77	78	78	78	78
Predicted Household waste Recycling Rates for Devon	54.8	55.3	58	59	60	61	63	65	65
Torbay	40	42.7	47	50	50	51	51	52	53
Plymouth	33	32.2	34	36	37	38	39	45	45
2005 Devon Strategy targets					50		60	65	

Using the predicted growth rates and individual recycling rates the table below shows predicted tonnages of LACW that will arise and the impact on residual waste remaining when the proposed Energy from Waste (EfW) plants come on line in 2014.

13

Table 5: Predicted tonnages of LACW waste

Year	11/12	12/13	13/14	14/15	15/16	19/20	25/26	29/30
Arising	372,899	376,628	379,171	380,119	383,176	398,734	423,264	440,451
Recycled	200,839	207,183	213,403	218,591	225,820	244,742	270,414	283,006
Residual	172,060	169,445	165,768	161,528	157,356	153,992	152,851	157,445
Residual remaining when Exeter and Plymouth EfWs built				41,528	37,356	33,992	32,851	37,445

The amount of residual waste remaining under the baseline scenario is predicted to be 40,000 tonnes per year when both Exeter and Plymouth EfW plants are built. The Exeter plant is under construction as is the Plymouth plant. Each plant will take 60,000t of Devon's waste each year. The 40,000t figure could vary from 19,000t to 64,000t if extremes of growth/recycling were to occur (see pessimistic and optimistic scenarios at Appendix 1).

Table 5 shows that up to 7000 more tonnes of household residual waste need to be recycled year on year to align with the targets and predicted growth rates.

Issues

The UK government must comply with the EU revised Waste Framework Directive and Landfill Directive targets of 50% recycling and composting by 2020 and a 35% reduction in Biodegradable Municipal Waste (BMW) to landfill. It is incumbent on the UK local authorities to contribute to meeting these targets in line with the waste hierarchy which puts recycling above recovery of energy and landfill for the majority of materials. Those who do not may face fines under the Localism Act. The cost of landfill is also now greater than the cost of recycling for many materials (and is set to continue to due to increases in the landfill tax) so in terms of the waste hierarchy, the environment and the cost of waste disposal there is merit in continuing to strive for high recycling rates. Research is being carried out as part of this review to look at the costs of incremental increases in the recycling rate which will help direct the Devon Authorities towards the most sustainable options for dealing with waste.

Future plans

- o The Devon Authorities will aim to keep waste growth to a minimum where it is within their influence.
- o The Devon Authorities together will aim to meet household waste recycling rates of 60% by 2014/15 and 65% by 2025/26*

* achievement of these rates will be dependant on the impact of impending European legislation, in particular the End of Waste criteria (see Chapter 5)

7. Waste prevention

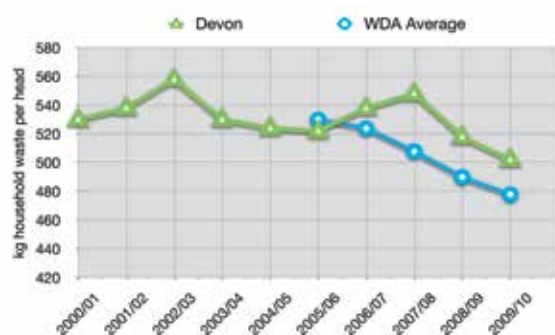
At the top of the waste hierarchy is waste prevention. If waste can be prevented then there are no costs and no environmental impacts to be considered. The Government is obliged to produce a Waste Prevention Plan by December 2013 under the requirements of the European Waste Framework Directive.

There are many ways of preventing waste ranging from improved product design including extending product longevity and designing out obsolescence to reducing packaging, reducing food waste, refusing single use bags and reducing junk mail. To a great

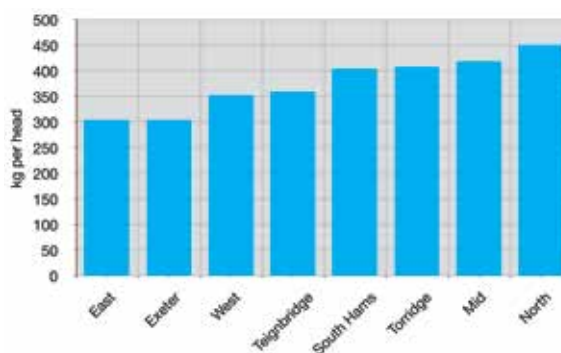
extent it is about behavioural change, a change in the way people think and particularly changing attitudes from thinking that waste is unavoidable to thinking of it as a preventable phenomenon or at least a valuable resource.

Although Devon performs very well in terms of recycling and composting, when measured against other counties in respect of total waste collected per person Devon does not fair so well.

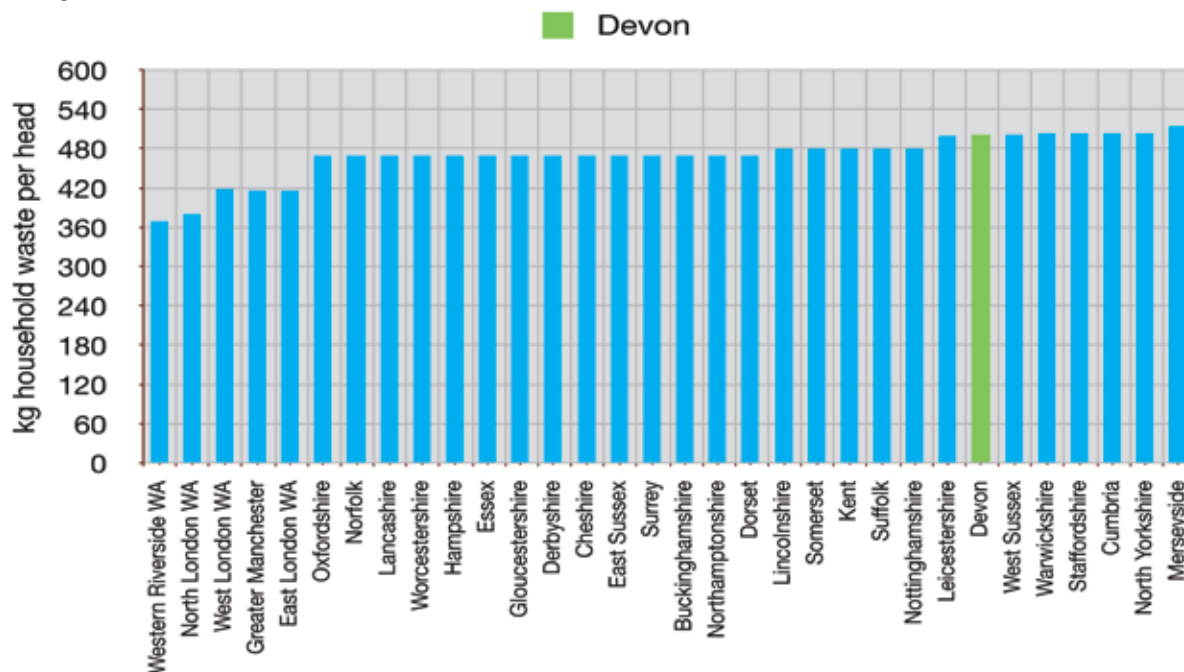
Graph 4. Devon collected waste



Graph 5. District collected waste 2009/10



Graph 6. WDA collected waste 2009/10



Even in Devon there is a considerable range across the county when this indicator for **collection authorities** is considered – in 2011/12 from 299 kg/person in East Devon to 450 kg/person in North Devon. There are a number of factors which could affect these figures including frequency of residual waste collection, socio economic factors, political priorities, size of bin and policies on the allowance of “side” waste and collection of garden waste. Whatever the reasons there is a need to help Devon’s householders reduce their waste.

The ‘Don’t let Devon go to waste’ campaign began as an awareness raising campaign highlighting that there is a problem with just throwing away endless quantities of waste. This developed to a call to action campaign whereby householders were encouraged to recycle. The next stage of the campaign was to encourage reuse and finally the focus is on waste prevention. Various initiatives focussed on waste prevention have covered excess packaging, plastic carrier bags, food waste, junk mail and home composting. A key factor promoting waste prevention is that it will actually save people money - for example it has been calculated that the average family wastes £600 throwing away food each year.

‘Don’t let Devon go to waste’ is an award winning brand name that is recognised by 73% of Devon’s population, and has been used by other counties and gained national recognition. Over the years since its launch in 2003 a broad range of communication tools have been used to disseminate its messages. These include TV, radio, bus backs, billboards, PR, editorials, and roadshows. On-line communication techniques are the current focus and include a website, online video recycling trails, video messages, an e-zine, Face book and Twitter pages. There are also plans to develop a smartphone App. (See Communications Strategy). The campaign has enabled significant inroads to have been made in terms of reducing waste to landfill (by 48% since 2004/05) with pre and post market research consistently showing increased activity following each specific campaign.

The Government is tackling waste prevention at a high level - e.g. via voluntary agreements with retailers under the Courtauld Agreement in which retailers pledge to reduce packaging for example. As part of their obligation to provide a Waste Prevention Plan they will be looking at product design and other front end methods of achieving waste prevention. However, this does not preclude local authorities approaching local retailers on waste matters.

Zero waste

In the past the Devon Authorities have proposed to work towards the concept of Minimum Waste rather than Zero Waste. There are many different meanings of Zero Waste including zero waste to landfill, or for example the Scottish definition of Zero Waste is ‘reducing unnecessary use of raw materials; re-using products where possible and recovering value from products when they reach the end of their lives either through recycling, composting or energy recovery’. There is potential to aim for zero waste in terms of the Scottish definition and this will be given consideration as part of the Review.

Defra is working with WRAP to launch a Zero Waste Award early in 2013 as an incentive to communities and businesses to adopt a zero waste ethos. This would be voluntary and would involve a stepped accreditation system (gold, silver, bronze) covering industry, the public sector and community groups.

Waste Prevention and Carbon Resource Research Consortium

A key issue associated with waste prevention measures is the problem of measuring their impact in terms of quantifying tonnage saved or carbon impact mitigated. Without this evidence budget provision can be difficult to justify. Devon authorities are currently implementing food waste and junk mail reduction initiatives. Methods have been developed by WRAP to measure their impact in tonnage saved to landfill. For example research has shown that for every person that signs up for the Mailing Preference Service to avoid junk mail, 4kg/ household/year of waste paper is avoided. Similarly with the Real Nappy Campaign, for every family that uses reusable nappies instead of disposables, research has shown that 350kg/year of sanitary waste is prevented.

The County Council has joined a local authority consortium which aims to develop a practical tool to help local authority decision makers quantify the benefits of waste prevention in tonnage, cost and carbon terms.

Quantifying the climate change implications of waste prevention is not straightforward. Clearly, there are benefits to authorities in not having to collect, transport and manage waste at a treatment or disposal facility. There are also benefits in terms of avoiding the embodied production and supply chain impacts associated with the products and materials that comprise the waste discarded to the bin, There may also be wastes that have served no function whatsoever, such as preventable food waste. However, in most cases the discarded item has served a purpose

or function. So whilst waste is prevented, there may be other consequences in terms of the carbon emissions associated with alternative way of delivering the function. For example this might be increased embodied impacts associated with engineering more durable products, or increased wastage in the food supply chain if food packaging is reduced. There may also be lost benefits where the waste might have been

recycled or treated to recover energy. Understanding and quantifying the carbon benefits of waste prevention is more complex than for those services that manage and treat wastes.

Further work will be carried out in association with the consortium to identify the benefits of waste prevention in Devon.

Future plans

The 'Don't let Devon go to waste' campaign will continue to focus on:

- o Providing advice and information on waste prevention
- o Advising on ways to reduce food waste
- o Encouraging reuse
- o Offering advice on how to sign up to the Mailing Preference Service
- o Encouraging choosing goods with no or reduced packaging
- o Discouraging the use of one-use plastic bags
- o Promoting the use of Reusable Nappies
- o Promoting home composting
- o Promoting the use of rechargeable batteries

In addition, the Devon Authorities intend to continue to encourage householders to reduce their waste and, whilst tailoring proposals to local circumstances, have already considered, or will consider options such as:

- o Fortnightly collection of residual waste across the county
- o Offering smaller bins for residual waste
- o Not allowing side waste (extra waste next to standard bin)
- o Charging for garden waste

The following waste reduction targets will be set:

Kilogrammes of household waste collected per person per year:

- o 2011/12 473
- o 2012/13 470
- o 2013/14 465
- o 2014/15 460
- o 2015/16 455
- o 2016/17 450

Incentives

The Government is keen on offering incentives to encourage householders to reduce, re-use and recycle more of their waste. These might be in the form of recognition, vouchers for local schools or community groups, or donations to charities, other rewards or prizes. The Devon Authorities will consider the use of incentives, potentially applying for Government funding when available.



8. Reuse and Community Sector activities

Reusing an item rather than throwing it away can prolong its useful life, reduce the need for finite valuable resources and create jobs in terms of repair and maintenance. In Devon, the Community Sector in particular has excelled in promoting and developing reuse.

There are many examples of reuse practice, for example:

- Ebay
- Freecycle
- Freegle
- Recyclethis
- Car boot sales
- Second hand and repair shops
- Jumble sales
- Charity shops
- Furniture reuse shops

The local authorities in Devon encourage reuse by:

- Providing reuse shops at Recycling Centres
- Channelling Bulky Household Waste through Recycling Centres
- Supporting Funding Furniture and white good refurbishment and reuse through payment of reuse credits
- Providing Website suggestions and advice
- Promoting reusable bags
- Promoting reusable nappies
- Advising on use of left over food

Reuse can suffer from perceptions of low quality or being only suitable for those who cannot afford to buy new. Sometimes the “look” of reuse shops perpetuates these misconceptions. Other barriers include high rents, prohibitive collection costs and high overheads. White goods are going back to retailers under the producer responsibility regulations which reduces their availability to reuse groups. The Government has also changed training rules which has led to the failure of previously prospering groups such as Bodmin Resolve. Potentially the recently launched Big Society Capital Initiative and

more locally the Devon Investment Fund may offer new sources of funding.

Nevertheless, in times of austerity reuse entrepreneurial activities come into their own and there is currently a lot of competition in the field. There are though, fewer goods and quality is lower due to the recession and people keeping their goods. Cash for phones or textiles are becoming increasingly common and reuse groups are increasingly tapping into Local Authority Bulky Household Waste collections.

Community Sector

The Community Sector has played an important role in developing sustainable waste management in Devon. In fact recycling in Devon was begun by the Community Sector. Whilst many community initiatives are small scale, Community Sector businesses such as South Molton Recycle have won tenders to deliver kerbside collection services competing successfully against some of the bigger players in the waste industry.

The Devon Community Recycling Network (DCRN) has been successfully working in partnership with Local Authorities and others since 1992 to maximise mutual benefit and the contribution made by social enterprise businesses and community projects to waste reduction, reuse, recycling and composting. DCRN set up Refurnish in 2001 (formerly Devon Furniture Forum) to enable furniture and appliance reuse, Refurnish now operates 6 furniture reuse shops linked to a warehouse and repair centre.

The work of DCRN helps to achieve a number of policy objectives in the Strategy including:

- Sharing experience through networking,
- Giving information and support to the community sector,
- Promoting reuse through involvement with Refurnish Devon,
- Raising awareness of waste issues,
- Developing joint strategies,
- Promoting co-operation, cohesion and better understanding between different sectors working to reduce waste,
- Tackling waste, environmental issues and social disadvantage in their communities by creating value from waste which in turn generates jobs, training and volunteering opportunities and boosts the local economy.

Devon's community waste sector contributes over £1million/year to the social economy, it has attracted over £2million in external funding to help tackle waste, it sustains over 100 jobs, and redistributes over 32,000 items of furniture and appliances every year to people in need.

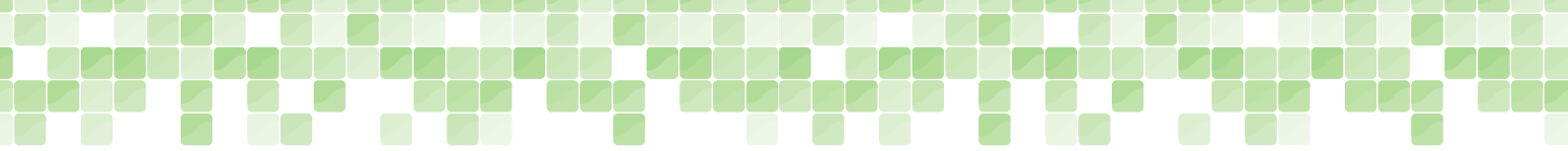
Through the Devon Authorities Waste Reduction and Recycling Committee (DAWRRC) the Devon Authorities fund the part time posts of Community Recycling Officer and Community Composting Officer who perform coordinating roles, encouraging and enabling community groups to reduce, reuse, recycle and compost their waste. The contribution made to the Devon recycling rate by the Community Sector in 2011/12 was 5321 tonnes equating to 3% of the 55%.

Initiatives include:

- Community composting site set up and ongoing support
- Schools composting set up and support
- Furniture and white goods reuse group support
- Applying for funding bids
- Sharing knowledge and experience through networking with Transition Towns and other groups
- Producing 3 editions of the Junk Mail newsletter distributed to over 600 Parish Councils, community groups, relevant Councillors, Agencies, schools and individuals, to promote waste awareness and keep people informed.
- Running an annual conference to share best practice
- Supporting the Properjob flagship community reuse demonstration centre in Chagford

The County Council chooses to pay recycling credits to 3rd parties e.g. community composting groups and using DAWRRC funds, reuse credits are paid to Furniture and white goods reuse groups. Recycling credits are sums of money (currently £52/t) paid to groups for every tonne of waste recycled rather than landfilled. They are discretionary payments with respect to 3rd parties but statutory for local authorities. There is a cap related to tonnages with respect to community composting credits.

In 2010/11 more than 28,924 items (664 tonnes) of furniture were distributed by eleven projects (based on reuse credit returns), and 6,886 items (154 tonnes) of household electrical appliances (white goods) making a total of 35,810 items or 818 tonnes.



The added value of supporting the community sector has wider benefits than just increasing the recycling rate, these include community cohesion, jobs, training, and reduced price goods for the disadvantaged.

The Localism Act may assist the development of the community sector. Community Engagement is covered in Chapter 12 of this review.

It is difficult to sustain community sector initiatives without funding of some sort and a considerable amount of time is spent by the DCRN coordinator making funding bids.

Future plans

- o The Devon Local Authorities will continue to support the activities of the Community Sector
- o Supporting give and take* days
- o Promoting Swishing** events
- o Promoting Waste Electrical and Electronic Equipment (WEEE) reuse through the WEEE contract
- o Consideration of funding bid to DAWRRC to revamp and improve signage to and publicity of Refurnish Reuse shops
- o Improvements will be made to the operation of the resale areas at Recycling Centres
- o The Recycling Centre Contractor will take the opportunity to partner with the Community Sector to promote re-use where possible
- o Consideration of hierarchy of reuse for Bulky Household Waste items
- o Research with the retail sector partnership working for furthering reuse
- o Work closely with the social housing sector to promote furniture reuse
- o Carry out market research on capacity/value of central and satellite re-use centres
- o Research web-based system for advertising items for re-use from Refurnish
- o DCRN and DCCN and Refurnish will continue to support the community sector
- o DCRN will continue to support Refurnish to develop a Gift Aid scheme whereby a tax rebate can be reclaimed following the sale of donated goods

*Give and take days are similar to jumble sales but no money changes hands and the goods are weighed to identify savings from landfill

**Swishing events are social events where unwanted clothes are taken along for exchange. No money changes hands.

9. Recycling

i) District/Unitary Recycling

The District Councils of Devon collectively have an excellent recycling rate which has been achieved over 20 years through gradually increasing the range of materials collected for recycling and the number of households to whom recycling is offered. 100% of properties across Devon now have a recycling collection. The contribution to the overall Devon recycling rate made by district recycling is 66% (of 55%). District recycling rates vary from 36% to 60% with an average of 49%. Recycling rates have consistently increased over the years. However, it will become increasingly difficult to further increase the rates because the rates are weight based and most heavy materials are already collected - e.g. paper, glass, organics. In addition to this, there need to be secure markets for the materials otherwise collection becomes uneconomic. Retailers are reducing the weight of packaging - i.e. light-weighting packaging, which, whilst beneficial to the environment and to transport costs, a move which is, of course, supported by the local authorities, also means that recyclate weighs less, having a negative impact on recycling rates.

Types of material collected

The table at Appendix 6 details the Authorities' collection regimes. A variety of collection methods and frequencies have evolved over the years (bins, boxes, bags) but the majority of key materials are collected for recycling at the kerbside or via bring banks across the county. National and local intelligence on the optimum method of collection varies and evolves. In order to maximise recycling take up the current opinion is in favour of weekly recycling, weekly food waste, fortnightly residual waste and charging for garden waste.

Four Devon Districts collect recycling weekly and four collect fortnightly. Only one authority collects residual waste weekly (Torridge). The collection of food and garden waste varies from no food waste collection (Exeter), to weekly food and to fortnightly garden, food and cardboard. There is a separate chapter on organic waste.

The only major 'dry' recyclable materials that stand out as not collected or collected significantly differently across Devon are:

- Mixed plastics
- Cardboard

In addition to this, glass and textiles are not collected at the kerbside in Exeter and South Hams due to operational aspects of their collection and sorting methods. A comprehensive network of bring banks is provided as an alternative.

The collection of mixed plastics is a country wide problem mainly due to i) the contamination of this sort of plastic with food and liquids, ii) its volume which would require reconfiguration of vehicle collection rounds and collection vessels (and potentially more vehicles) and iii) its low value at reprocessing plants. However, technology is improving for the separation of plastics and a Devon wide collection of mixed plastics is being considered. Research is also being carried out into the potential to collect mixed plastics with card.

Cardboard is similarly voluminous. Further discussion of card is covered in the organic waste chapter due to the fact that four authorities collect card with garden and food waste.

In an ideal world it would be easier for householders if all authorities collected the same materials by the same method at the same frequency. However, different methods have developed to some extent due to the different types of housing and rural/urban mix. Also contracts have been let for parts of the services and in house arrangements serve other authorities. Integrated working between authorities could potentially bring regimes closer. This will be considered further in Chapter 13.

Devon Dustbin

A survey was undertaken in March 2012 to analyse the contents of the "Devon Dustbin". Around 1600 households' residual waste was divided into 51 materials in order to discover the percentages of each material in a typical dustbin. This information enables the local authorities to better understand what items are being put into the wrong container and to better target communications to help people make the right decisions when throwing away their waste. It also gives a measure of the materials which remain to be offered for collection and their calorific value for energy recovery potential. A summary of the results is shown at Appendix 7. The report highlights the significant quantities of food waste, plastics, paper/card and sanitary items (i.e. nappies and incontinence pads) in the residual waste. The councils will therefore be continuing to focus on these areas for improvement.

Methods of collection

The choice offered of bins, bags or boxes relates to costs, frequency of collection decisions and ease of use depending on the type of households.

Seven of the District Councils collect recyclables in bags or boxes and sort the materials on the lorry. The materials are delivered to stockpiles or depots and bulked up for haulage to reprocessing plants. An alternative method is used by Exeter City Council who collect a range of materials in wheeled bins which are then sorted at a Materials Recovery Facility (MRF). There are a number of merchant MRFs being developed in Devon and further afield which will cater for a wide range of materials including mixed plastics. Research into options for materials collection and recycling will be considered as part of this review. Kerbside sort collections are considered to result in better quality recyclate which is important when selling to reprocessors. Quality recyclate achieves a higher income and therefore allows further investment in new or additional recycling. The latest “super” MRFs are purported to sort materials using technology which results in high quality outputs. There is an ongoing initiative by the campaign for Real Recycling which is promoting the need for quality in recycling. The EU Waste Framework Directive will allow mixed (known as co-mingled) recycling to meet its recycling target

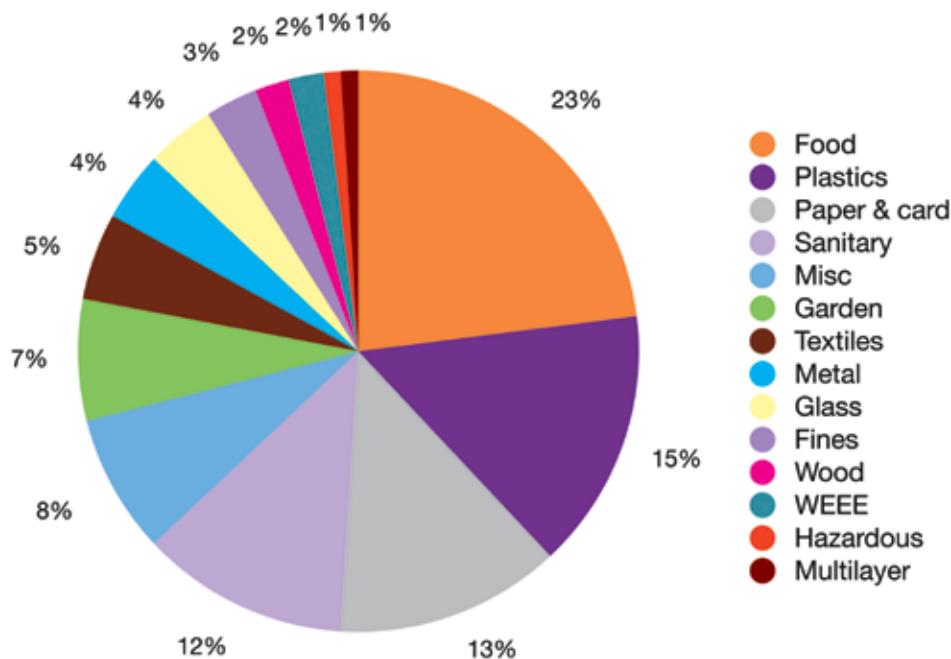
criteria. However, higher quality standards will be difficult to achieve unless technology advances significantly.

Reprocessing

The glass, paper and textiles are reprocessed via joint countywide contracts to which most of the districts, unitaries and the county are party to. This gives good reliable prices due to economies of scale and good quality recyclate. The materials are sent to various locations depending on the market prices available. Glass currently goes to Nottingham or Cwmbran, the paper is contracted to Aylesford Newsprint in Kent, the textiles are contracted to Wilcox and will go to a variety of markets depending on their quality. Plastics are increasingly being processed in the UK. Much plastic is, however, shipped abroad, mainly to the Far East where the demand for its use is greatest. Whilst this may seem unsustainable, the UK plastic reprocessing industry is still in its infancy and the plastic bales are used as ballast on returning ships.

As mentioned above, under growth and targets, the higher the aspirational recycling rate the higher the potential costs. Research will be undertaken into the costs of achieving higher recycling rates.

Chart 1. Devon Dustbin 2012



Recycling on the Go

Recycling on the Go describes the provision of on street recycling facilities and recycling in locations such as railway stations, airports, leisure centres, libraries and shops. Wherever litter bins may have been provided a recycling alternative should be offered. Some of the districts have provided these facilities but they are plagued with materials being contaminated and their placement is also sometimes thwarted due to planning considerations associated with aesthetics. Nevertheless, every opportunity needs to be taken to rationalise provision of recycling facilities whether people are at work, at home, at school or out and about in the community so the Devon Authorities will continue to offer and expand these facilities.

Future plans

- o Devon district councils and the county council will continually looking at ways to improve and rationalise their services
- o Recycling of cardboard (as opposed to composting it) across the county is being investigated
- o Recycling of mixed plastics across the county is being investigated
- o Consideration is being given to approaching supermarkets to offer plastics recycling banks
- o Research will be carried out to determine the optimum methods to be used for quality and economic recycling and also into the relevant costs
- o Devon Authorities will seek to expand 'Recycle on the Go' where appropriate

ii) Household Waste Recycling Centres

The County Council is responsible for providing Household Waste Recycling Centres (HWRCs) for householders to deposit their bulky household waste. They are required to be "reasonably accessible" to persons resident in the area. There is a network of 20 sites that provide good coverage across the county with most centres of population having access to a facility near by. Sites are provided within a 10 mile radius of every household in Devon where economically practicable. The vision is to provide a network of modern attractive sites which are convenient to use and designed to maximise the recycling of the material brought in. The ethos of bring and buy is encouraged, promoting reuse and improving cost effectiveness.

The performance in terms of recycling rate has improved from 61% in 2004/5 to 78% in 2011/12, with the 65% original contract target being far exceeded. The sites handled 80,700 tonnes of waste in 2011/12. The recycling contributes 31% to Devon's overall recycling rate. It is estimated that 1.6 million people visited the sites in 2011/12.

There have also been a number of improvements to sites since 2005 to make existing sites more efficient and provide new sites where the service was previously limited. The improvements are listed below:

- Pinbrook, Exeter – new site 2011
- Caddesdown, Bideford – new site 2008
- Exton Road, Exeter, Brunel Road, Newton Abbot and Seven Brethren, Barnstaple – improvements to increase capacity and efficiency
- Anvil Corner, Holsworthy and Punchbowl, Crediton – improvements to layout
- Sutton Barton, Honiton and Woods Farm, Sidmouth – small improvements

A major contributing factor to the increase in recycling rate at these sites from 2003 was the implementation of a financially incentivised contract. This included bonuses for reaching recycling targets and for keeping waste received below a certain threshold. Since 2005 a greater range of materials have been recycled including mixed plastics, WEEE and small batteries. A new contract was let in May 2012 which advances on the previous contract by implementing higher recycling targets and collecting new materials including mattresses, carpets and bulky plastics.

Given the Government's enthusiasm for the 'Big

Society' and as a consequence of the proposed Localism Act if local communities wish to provide Recycling Centres in their locality the Devon Authorities will offer advice to assist them with their endeavours.

Future plans

Proposals for the next 10 years include:

- o Relocation of Woods Farm (Sidmouth) site 2013
- o Relocation of Ivybridge site 2014/15

And subject to funding being available:

- o New site for Cullompton/Tiverton/Willand
- o Improvements Phase 2 to Tavistock site
- o Relocation of Totnes site
- o An ongoing programme of general infrastructure improvements will be implemented
- o The County Council will continue to strive for improved customer service through its Recycling Centre contract
- o Consideration will be given to expanding the services offered at Recycling Centres where space and resources allow.
- o Advice will be given to any communities who wish to develop, fund and manage their own Recycling Centres

10. Organic waste

Centralised large scale composting of food, garden and cardboard waste

The 2005 Devon Strategy advised that large scale In Vessel Composting (IVC) of food (and garden and cardboard) waste would be necessary to meet landfill diversion targets set by the Government to meet the EU Landfill Directive. Following the successful bid for funding from Defra for investment in In Vessel Composting, three IVC sites have been constructed in Devon, at Heathfield in Teignbridge (2004), Broadpath in Mid Devon (2006) and Deep Moor in Torridge (2009). These sites take organic waste (garden waste, food waste and cardboard mixed) from residents of Teignbridge, South Hams, Mid Devon, Torridge; and garden and food waste mixed from North Devon. The waste is shredded and then composted in large enclosed vessels having air passed through and then left to mature for 12 weeks on external concrete pads. A good quality compost results that is taken to farms where it used as a soil conditioner to improve soil structure and reduce the need for fertiliser.

The use of IVCs for organic waste composting was seen as pioneering a relatively new method in the UK in the early 2000s. However, the Government is beginning to favour the source separation of food waste alone for Anaerobic Digestion (AD) due to its potential to create energy as well as provide a fertiliser. The districts of East Devon and West Devon have chosen to collect food waste only and this is processed at merchant plants at Holsworthy and Langage Anaerobic Digestion Plants. The outputs from AD are potentially electricity or methane gas to the relevant National Grids, a digestate to be used as fertiliser, and heat.

A total of 65,686 tonnes of waste each year are composted at IVCs (53,133t) and AD plants (3208t) in Devon. Each year Torbay composts 4700t of garden waste and 3392t of food waste and Plymouth composts 11,962t of garden waste.

Garden Waste Composting

Garden waste (28,294 tonnes) from Household Waste Recycling Centres is shredded at sites around the county and then transported for composting on farms.

Garden waste is collected for treatment at the IVCs by all authorities except for Exeter, East Devon and West Devon. Exeter have chosen not to collect food waste but offer a seasonal charged for garden waste collection service (3039 tonnes). Garden waste is collected at no charge in West Devon. Garden waste is collected in East Devon and is charged for.

Community composting

Community composting is carried out at 26 sites across Devon accounting for 3813 tonnes of garden waste diverted from landfill. Sites are set up by local groups of volunteers, e.g. gardeners or allotment owners. Local householders are invited to bring their garden waste to the site where it is shredded and made into compost over time. The compost is then available to take away. Discretionary recycling credits are paid by the County Council at varying rates depending on the quantities involved. Depending on the scale of the operation the sites may need a permit from the Environment Agency (EA). The operations are audited by the district councils and monitored by the EA if appropriate.

Home composting

Home composting is the most sustainable option for householders and councils since most food and garden waste can be composted at home to produce a compost for use on gardens or allotments. It is acknowledged that not everyone can compost at home - they may not have a garden, or they may not have a need for the quantity of compost they produce. However, all the councils offer subsidised compost bins and advice on how to compost successfully.

Issues

The revised EU Waste Framework Directive is driving the requirement to produce quality compost from municipal waste. In order for composting to be "counted" as recycling (in terms of the UK meeting the statutory EU recycling target of 50%) the end product has to meet a quality protocol as yet undefined by the EU. The UK industry has developed a standard called PAS100 for composting and PAS110 for Anaerobic Digestion. The compost/digestate from Devon does not yet meet this standard (except that from Holsworthy AD plant). In order to meet the standard the cardboard which is currently collected with garden and/or food waste (in South Hams, Mid Devon, Teignbridge, Torridge and West Devon) will have to be collected separately. The authorities are currently discussing how and when to implement this given the significant costs and disruption that will occur. Guidance on a timescale is awaited from Defra.

Given that the IVCs have a useful life of about 10-15 years consideration needs to be given to how organic waste will be dealt with in the future. As indicated above this is likely to mean a move away from IVCs to Anaerobic Digestion (AD) and separate collection of food waste. The County Council is regularly approached by private companies offering AD capacity. Given the Government's enthusiasm for AD, and assuming incentives such as the Renewable Heat Incentive (RHI)

are attractive enough to private companies, there would appear to be no need for the County Council to invest in its own AD capacity. In the current financial climate it would be difficult for the County Council to find the capital funding required to build AD plants.

Districts that offer a weekly food waste collection service find that they get good participation rates. This is because there is no need for people to use their landfill bin if they are reluctant to leave food in their bin for a fortnight (as with those authorities who collect food waste fortnightly). A recent analysis of the organic waste going into the IVCs has shown that 0.6 kg of food waste per household per week are collected whereas at the AD plants approximately 1.7 kg of food waste per household per week are collected.

It has been acknowledged that it is not a particularly sustainable practice to collect garden waste from householders since this involves cost and environmental impact of collection vehicles and does nothing to encourage home composting. However, it is obviously a service that is appreciated by the public, enabling them to avoid a trip to the Recycling Centre which in itself could be considered to be unsustainable. Nevertheless, if the Devon local authorities follow the separate food waste collection to AD route they may also need to consider offering a charged-for garden waste collection service.

Future plans

- o The Devon Authorities will continue to promote home and community composting
- o The County Council will continue to support treatment of garden and food waste in the most appropriate way including by Anaerobic Digestion.

11. Residual Waste

Landfill is still currently the method of disposal of residual waste in Devon. The residual waste goes to landfills at Deep Moor, Heathfield and Broadpath with a small quantity going to Cornwall from West Devon. The total tonnage sent to landfill in 2011/12 was 171,595t Municipal Waste including 158,558t household waste.

So far Devon has met its landfill diversion targets under the Landfill Allowance Trading Scheme. In 2009 Devon's allocation was 156,679t of Biodegradable Municipal Waste to landfill and the actual amount landfilled was 133,376t. This has been achieved through reduction, reuse, recycling, composting and anaerobic digestion of the waste arising. It is predicted Devon will meet its 2013 allocation which is 104,359t. UK plc will be required to meet the 2020 landfill diversion target but the Government appears to be confident that the landfill tax escalator will act as the driver to achieve this rather than further WDA level landfill allocations.

In order to divert greater quantities of waste from landfill to meet Landfill Directive targets and to provide more sustainable waste management options the County Council and its partners have begun to develop energy recovery capacity. Construction began on an Energy from Waste Facility in Exeter in March 2012. This will process 60,000 tonnes of residual waste (from 2014) from Exeter and the surroundings, including waste from East Devon and parts of Teignbridge. 3MW/hr of electricity will be exported to the grid. Best endeavours will be made to use and market the energy generated from the incineration and discussions with potential customers continue.

Following a procurement exercise by the South West Devon Waste Partnership (A partnership of Devon, Torbay and Plymouth Local Authorities), a 30 year contract for dealing with residual waste from Plymouth, Torbay and the South of Devon (West Devon, South Hams and part of Teignbridge) was let. Planning permission for an Energy from Waste Facility in the dockyard at Plymouth was granted in December 2011. It is anticipated that the plant will be operational by 2014. Each year 60,000 tonnes of waste from South Devon will be dealt with at this plant. Electricity will be exported to the Grid with heat being used by the Royal Navy Dockyard.

Following commissioning of the two Energy from Waste Facilities the remaining residual waste to be dealt with from 2014 onwards will be that arising in Mid Devon currently landfilled at Broadpath, Uffculme, and in North Devon and Torridge which is currently landfilled at Deep Moor in Torridge.

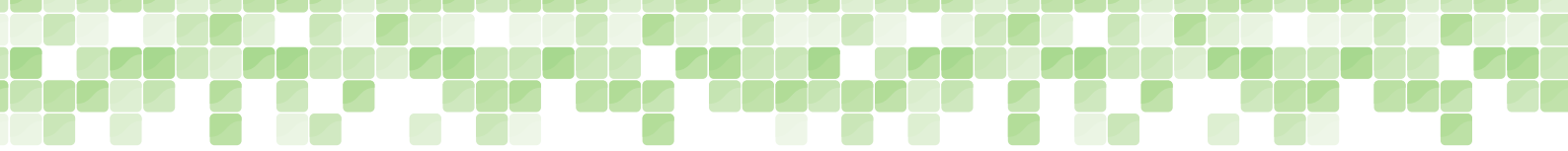
According to the baseline growth and recycling scenario which assumes an ambitious 60% recycling rate by 2014/15 and zero growth, it is forecast that there will be approximately 40,000 tonnes/year of residual municipal waste to be dealt with. Although this waste could technically be landfilled it is likely that further EU or government policies will result in the banning of biodegradable waste from landfill in the near future. Since as much as 68% of municipal waste is biodegradable the aim for Devon will be to not landfill the 40,000t but to realise its material or energy potential.

The 2005 Waste Strategy favoured small EfW (pyrolysis and gasification) plants in terms of environmental impact and the proximity principle. However, these technologies were unproven on Municipal Solid Waste at the time. The County Council therefore chose to develop a small Energy from waste plant. Subsequently the opportunity to partner with Torbay and Plymouth to procure a thermal technology facility in Plymouth was taken to achieve value for money through economies of scale.

The proposal for the remaining residual waste is that a contract will be let allowing the market to propose a solution which diverts waste away from landfill and is economically and environmentally sustainable.

Charts 2, 3 and 4 over page show actual and proposed changes in waste management in Devon from 2004/05 to 2017/2018





2004/5

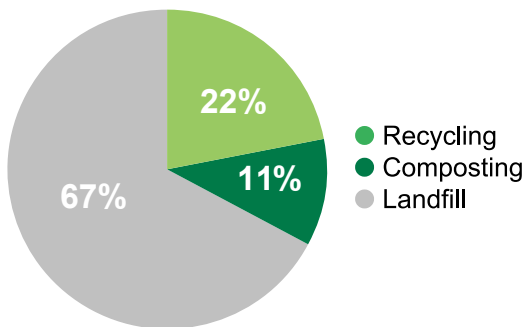


Chart 2. Waste Management in Devon 2004/5

2011/12

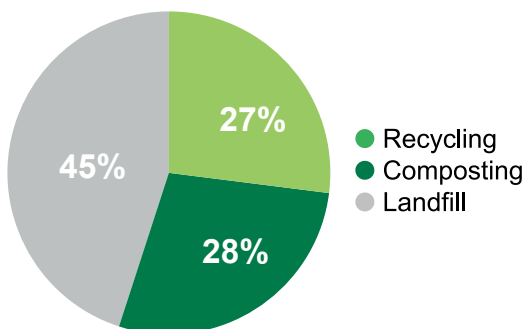


Chart 3. Waste Management in Devon 2010/11

2017/18

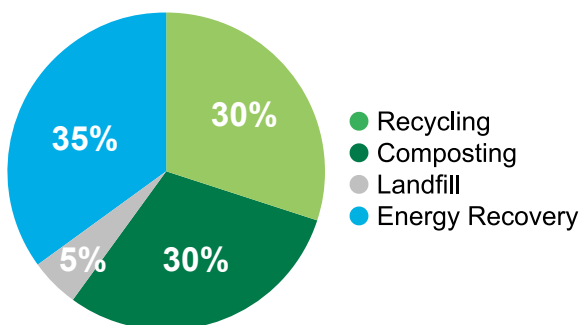


Chart 4. Waste Management in Devon proposed for 2017/18

Regional considerations

The Regional Development Agency and associated working groups have been disbanded and although a Regional Waste Management Strategy was developed it is now out of date.

Discussions are held with regional neighbours relating to policies on waste treatment and Recycling Centres as well as to organise regional events such as the Love Food Hate Waste campaign and occasional conferences. Meetings have recently been initiated with the adjacent County Authorities of Cornwall, Somerset and Dorset to develop any opportunities for sharing of experiences in relation to Integrated Partnership working and also to discuss sharing of facilities, joint procurement and other areas of common interest.

Transfer Stations

The County Council is currently letting a contract for the provision of a Transfer Station in Teignbridge to bulk up waste for transfer to the Plymouth Energy from Waste plant.

Planning permission is currently being sought for a Transfer Station in Exeter.

Future plans

- o During 2012/13 the County Council will begin the process for tendering the contract for dealing with the residual LACW waste emanating from Torridge and North Devon. The contract will direct waste away from landfill but leave the market to offer solutions.
- o Discussions will be held with regional partners to discuss opportunities for joint working

12. Behavioural Change, Community Engagement and Waste Education in Schools

Devon has always been at the forefront of waste management with the formation of the DAWRRC committee providing a springboard for numerous countywide projects including the 'Don't let Devon go to waste' campaign.

With the countywide recycling rate reaching 55% and all the major materials being collected at the kerbside or at bring banks (with the exception perhaps of mixed plastics) further inroads into reduction, reuse and recycling of waste along with the concept of Resource Management will rely more on influencing behavioural change. "Nudging" people to change their behaviour and influence their friends and family such that entire groups of people take up sustainable waste practices is acknowledged as a successful way to encourage behavioural change, particularly through on line and digital opportunities such as Facebook, Twitter and Youtube.

In addition, with new central government concepts, large scale spending cuts and the rise of 'Localism' and 'The Big Society' Local Authorities are radically rethinking their role in providing services to the community.

Community Engagement Project

The Community Engagement project has been conceived against this backdrop, seeking to put the emphasis for achieving change (greater recycling, reuse and waste minimisation) on the whole community through their ownership of the problem.

The aims and objectives of the project will be:

- To recruit and support Community Recycling Ambassadors
- To promote waste reduction, reuse and recycling to targeted communities
- To measure the impact of increased & localised communications in targeted communities
- To identify and work with existing community organisations e.g. town and parish councils, Women's Institutes, schools, churches, & businesses.

An analysis of performance, population and service provision has been carried out in 2011 which has

identified Holsworthy and Great Torrington in Torridge as the most suitable towns to begin the Community Engagement Project. The initiative will then be cascaded to other towns across Devon.

It is anticipated that the project will seek to engage with all sectors in some way, but ultimately will seek to reach typical non recyclers and hard to reach groups. It is hoped that this may be achieved in part, by creating a social cascade of information through the community, rather than directly.

Campaign messages will include:-

- Love Food Hate Waste – with a focus on saving money
- Using the Mailing Preference Service – the take up of this service and therefore the reduction in junk mail can be monitored easily
- What's in your Recycling box/bin/bag? – encouraging the correct materials are recycled without contamination

The 'Don't let Devon go to waste' branding would be made available to the community to adopt or use as co-branding.

The local authorities will work closely together and will also be responsible for collating data, and managing and monitoring progress of the project towards set targets.

The Community Recycling Volunteers will be active in the community on a regular basis, acting as a point of contact, providing local advice, supporting existing community events (coffee mornings/WI meetings/church events/ local markets etc.) and organising new ones e.g. litter picking days, swap it days.

It is hoped that a local sponsor(s) can be found to donate a reward to the community when it reaches its target recycling or waste minimisation rate. This could be in the form of money towards a community project or in the form of discounts vouchers at the local shops. The nature of the reward will depend on funding levels and the involvement of partner organisations.

'Don't let Devon go to waste' Website

Online and digital opportunities are being taken to promote the reduce, reuse, recycle message. A forum/discussion & download area is currently being developed. This area could be used to support the Community Engagement Project Volunteers.

Schools Education

Whilst recycling rates are continuously improving, it is important to recognise the greater need to reduce waste in the future. Educating children is an essential part of our long term strategy to achieving a more sustainable future, with an increasing emphasis on waste minimisation, resource management and greater awareness of the issues surrounding consumerism.

Over the past 8 years the Devon Authorities have been steadily developing their waste education work and now have one of the largest waste education programmes in the country, with over 25,000 children involved in assemblies and/or workshops in 2010/11 academic year.

The Devon Schools Waste Education Contract is being re-let this Autumn and will provide for a comprehensive range of activities across Devon's schools for the next 5 years. Activities include workshops, site visits, assemblies, waste audits and the development of action plans.

There is a comprehensive website located on www.recycledevon.org which provides valuable information for primary and secondary school children and teachers.

The Devon Authorities have developed the Waste Education Strategy for Devon and this is included as a separate document with this Strategy Review. It is supplemented by a regularly updated Action Plan.

Future plans

- o The Community Engagement Project will be implemented from June 2013 if a European funding bid is successful. If not, alternative funding will need to be sourced.
- o Behavioural Change towards more sustainable waste management practices will be encouraged through online and digital methods and via a range of other communication methods detailed in the Communications Strategy.
- o Waste Education in Schools will continue to be a priority for Devon Authorities through the Waste Education Contract and the Waste Education in Schools Strategy and Action Plan

13. Partnership Working

Devon, Torbay and Plymouth

Prior to 1974 waste collection and disposal was undertaken by the then Urban District or City Councils. Following Local Government reorganisation in 1974 waste disposal and waste planning became the responsibility of the County Council with waste collection being undertaken by District, Borough and City Councils. The establishment of the Torbay and Plymouth City Unitary Councils in 1998 brought all waste functions together in those Council areas. In two tier areas (i.e. Devon County Council and Devon Districts) the division of responsibility has remained.

Despite this division of responsibilities, for 20 years the Devon Authorities Waste Reduction and Recycling Committee (DAWRRC) has lead the Devon Authorities including Plymouth and Torbay in a partnership that has seen the recycling rate increase from 2% to 55.3%. The working relationship between officers has possibly been closer than in any other authority across the country which has no doubt played a significant role in Devon being the top recycling county.

A range of initiatives have been implemented through this committee over the years including:

- Support for the Devon Community Composting Network
- Support for the Devon Community Recycling Network
- Real Nappy Campaign
- Don't let Devon go to waste
- County Show Roadshow
- Furniture Reuse credits

The key element of this partnership has been the development of joint contracts for the recycling of paper, glass, textiles and bulk haulage. These contracts have brought economies of scale over the years enabling consistent market prices to be achieved for these materials rather than relying on volatile spot markets.

The mechanism for funding the initiatives developed by the committee is as follows: the statutory recycling credit paid by the County Council to the districts is 'top-sliced' such that approximately £195,000 is put into the DAWRRC budget and not paid to the District Councils by the County Council. In 2011/12 the County Council paid £89,000 of the £195,000 with Plymouth and Torbay paying £27,000 and £13,000 respectively.

There is merit in assessing how waste management in Devon (currently costing £52 million and likely to rise due to pre treatment costs, population increase and increased landfill tax) might be delivered more effectively as part of an Integrated Service as against nine (or eleven including the Unitaries) separate organisations some of which are doing essentially the same or similar activities. In addition to financial efficiencies there may be potential for increasing recycling rates through harmonisation of collection schemes, enabling a common message across Devon on what and how to recycle. The Devon Local Government Steering Group and Chief Executives and Leaders met in April 2012 and support was given to explore a Waste Integrated Service Project Board to take forward the development of options for an integrated waste service.

Encouraged by the Government, a number of Shire and District Councils across the country have set up integrated Waste Partnerships and or Joint Waste Boards to manage waste services across their areas. In the South West these include Dorset, Somerset and Wiltshire. The main driver for such closer working arrangements is economies of scale as well as delivering a seamless public service. Scenarios could include countywide or clustered collection contracts, integrated waste management contracts (collection and disposal), partnerships based on Memorandums of Understanding, and fully constituted joint committees. Case studies have revealed that savings in the range of 5-15% can be made generally through closer working including bringing together collection arrangements.

A number of Devon authorities have made alliances and currently West Devon Borough Council and South Hams District Council are operating a partnership arrangement which includes sharing of senior staff including the CEO as well as waste service staff. North Devon and Torridge Councils are also working together at a corporate level.

It is envisaged that this Board will have member (with responsibility for waste) representation from all Authorities and will be serviced by a Waste Integrated Service Project Board Officer Team (Project Executive) which will have representation from all Authorities at senior waste officer level. The role of this Board will be to steer the work required to decide upon the level and form of an integrated waste partnership for Devon.

Development of closer integrated working would be an evolutionary process recognising the individual services that each Authority currently provide and the need to continue to give a good service to the residents of Devon.

Regional partnership working

A successful and award winning South West Regional Love Food Hate Waste partnership was entered into to campaign for reduced food waste across the South West. This brought economies of scale for media buy in rates and resulted in a significant increase in the number of committed food waste reducers across the region. This was initiated through the South West Regional Recycling Forum.

European partnership working

A bid has been made to the Waste in Action 2 fund for European Funding to support a major community engagement project. This involves a partnership with Medway Council and SMEDAR. This is dealt with in greater detail under Community Engagement in Chapter 12.

Future plans

- o The Devon Authorities will aim to progress partnership working towards a Waste Integrated Service Partnership subject to individual councils adopting this approach.
- o The Devon Authorities will continue to enter into partnerships with relevant groups where mutually beneficial.



14. Redundant Landfill Sites

Considerable progress has been made on the restoration of redundant landfill sites in Devon County Council's ownership since 2005:

Ashley, Tiverton: The ductile iron leachate rising main which transports leachate from the landfill to Tiverton sewage works has been replaced a modern HDPE pipe. Installation of the new pipe required a crossing of the River Exe.

Tolcis, Axminster: Tolcis landfill has been restored for use as pasture land. In addition to the earthworks, stabilisation of an area of rock face has been undertaken to prevent gradual loss of adjoining fields due to subsidence.

Molescombe, Frogmore: Molescombe landfill was restored in 2005 by a process of re-profiling and covering. The site has been planted with trees which will allow it to mature into a stable site with a low maintenance requirement.

Waste Management licences from Holmacott and Grovewell Farm have been successfully surrendered. In the case of Grovewell the site has been returned to the landowner. Holmacott remains in the ownership of Devon County Council and will need to be put to more beneficial use in due course.

Future plans

- o To continue to maintain and monitor closed landfill sites to ensure their impact on the environment is minimised

15. Commercial Waste

Waste Collection

Commercial waste is only the responsibility of Local Authorities if they are asked to collect it by local companies. Businesses are free to choose who collects their waste. Whoever collects the waste is obliged to comply with the revised Waste Framework Directive, including following the waste hierarchy and recycling at least four materials.

A number of Devon Local Authorities offer a broad waste collection and recycling service to businesses despite competition from private waste collection companies. Approximately 10,000 tonnes of commercial waste are collected each year by Devon Local Authorities.

Those authorities who offer commercial collections will be required (by EU legislation) to collect or arrange for the collection of at least 4 materials for recycling. It is already incumbent on the businesses to ensure they separate materials for recycling. The districts who collect commercial waste are aiming to reduce their residual collections in favour of increased recycling collections.

Controlled Waste Regulations

The Government's recent revision of the Controlled Waste Regulations has focussed on Schedule 2 waste, Schedule 2 identifies which waste is household waste, which is household waste for which a collection and now a disposal charge can be made and which waste is commercial or industrial.

This is important legislation because for a long time the Waste Collection Authorities have been able to charge a range of groups for collection but the Waste Disposal Authority (WDA) has not been able to charge for disposal, e.g. waste from residential hostels, universities, self catering accommodation, campsites, and charity shops. The WDA is now able to charge for disposal if it so wishes. These new regulations have been enacted by the Government but the Devon Local Authorities are in discussions over their implementation in Devon.

Household Waste Recycling Centres

Recycling Centres are provided under the Environmental Protection Act for householders to take their Bulky Household Waste. They are not provided or designed to take commercial waste. However, recognising the demand from small businesses, small quantities of commercial garden and cardboard waste are accepted

for a charge by prior arrangement at a number of Devon's Recycling Centres that have the required capacity.

Further consideration can be given to expanding this service, however, a number of barriers restrict what can be achieved. For example: Government requires commercial and domestic waste data to be recorded separately which results in operational and administrative problems; space is limited at the sites; commercial operators may not want to identify themselves; weighbridges would be required; and charges would have to be made.


Further assistance for businesses

The Devon Authorities need to consider how far to go in assisting the commercial sector to follow the waste hierarchy. The Government is keen to see Local Authorities playing a greater role particularly with respect to SMEs but with no statutory duty to perform this function imaginative use of limited resources will be required to move this forward. The extent of Local Authorities' participation could range from signposting on websites, to providing generic leaflets, to trial initiatives in Business Improvement Districts such as Plymouth where services are paid for by groups of businesses.

Tourism

Devon is a county which benefits heavily from tourism. During the summer months the population increases significantly and this results in increased waste arisings across the county. Whilst much waste resulting from tourism (eg. waste from self catering holiday accommodation and from campsites) has recently been reclassified as commercial waste, it is important to consider the waste generated by properties which are used as second homes and also the increased amounts of litter, resulting from tourism.

In order to assist this group of people to manage their waste sustainably it is essential to consider the issues which will be specific to this group. To facilitate recycling of waste generated by tourists clear and concise information needs to be provided, as well as ensuring that the facilities needed to recycle are provided. This valuable transient population will be used to using waste and recycling services in different parts of the country. Using targeted communications and signposting to information and services will help to ensure that tourists are able to manage their waste safely and legally. Consideration of using national branding on communications aimed at tourists may also help tourists to recognise that the information is specific to waste and recycling.



Now that Devon has reached a 55% recycling rate, putting the effort into facilitating sustainable waste management for tourists will help to ensure that the recycling rate continues to increase across Devon

Future plans

- o The local authorities will confirm whether disposal charges will apply to Schedule 2 groups from 2013/14.
- o The local authorities will support businesses to carry out more sustainable waste management practices where resources allow.
- o The local authorities will promote sustainable tourism.

Appendix 1

Table showing predicted Local Authority Collected residual waste (in tonnes) at varying growth and recycling rates

High growth: i.e. growth rate rising to 1.5%
 Low growth: i.e. growth rate rising to 1%
 High recycling: i.e. recycling rate rising to 69.5%
 Low recycling: i.e. recycling rate rising to 63%

Year	2011/12	2012/13	2013/14	2014/15	2019/20	2025/26	2029/30
Baseline	172,060	169,445	165,768	161,528	153,992	152,851	157,445
High growth	172,060	169,445	165,941	162,896	159,536	163,122	171,378
Low growth	172,060	169,445	165,596	160,967	153,112	151,971	156,538
High recycling	172,060	165,483	165,388	158,558	148,782	143,415	139,885
Low recycling	172,060	168,674	166,627	167,490	167,844	167,158	168,697
High growth and recycling	172,060	168,674	166,801	168,908	173,888	178,388	183,624
Low growth and recycling	172,060	165,483	165,388	158,163	148,079	142,741	139,230

Note: From 2014/15 Exeter and Plymouth EfW plants are planned to be taking in 120,000t of the residual waste tonnages above

Appendix 2

Waste Core Strategy

The County Council is preparing the Devon Waste Plan which is a document which will replace the Waste Local Plan. The Plan will cover strategic and detailed waste planning policy and the identification of potential waste sites for both domestic and commercial and industrial waste. It will therefore provide all waste planning policy in a single plan. It will cover the period to 2031. The document will be used by developers and planners to locate waste management facilities over the next 16 years.

The Waste and Resource Management Strategy for Devon will align with the policies in the Devon Waste Plan.

Further information on the Devon Waste Plan can be found at www.devon.gov.uk/wastecorestrategy

Appendix 3

Costs of waste management

In Devon the costs of waste management are divided between County and District Authorities. In Torbay and Plymouth Unitary Authorities there is no such division. The authorities have traditionally provided costs in the form of Best Value Performance Indicators (BVPs) and although these are no longer required, they have been calculated over the years since the 2005 strategy was published.

The total cost to the County Council of dealing with residual waste, providing composting facilities and Recycling Centres and carrying out behavioural change initiatives is approximately £33million or £95/household/yr. The average cost of the District Council's refuse and recycling collection is £57/hh/yr. In other words, with the average tonnage of 1.1t/hh (372,349t ÷ 347,190hh) the average cost to a household per year is £167/t. This cost includes income gained from sale of materials and the recycling credits paid by the County Council to the District Councils and community sector.

Authority	Cost of waste disposal 2011/12 (LFT £64/t)	Cost of waste collection 2011/12
East Devon		£59.9/hh
Exeter		£36.6/hh
Mid Devon		£60.2/hh
North Devon		£76.3/hh
South Hams		£73.4/hh
Teignbridge		£36.4/hh
Torridge		£49.8/hh
West Devon		£57.6/hh
Devon County	£69.89/t	n/a
Torbay	£63.47/t (BV86)	£63.5/hh
Plymouth	£59.27/t (BV86)	£59.3/hh

Costs vary considerably from one district to the next depending on, for example, the urban/rural mix of households, the type of collection method and in house versus external collection contractors.

A significant element of the County Council Waste Management costs is the landfill tax (lft). This was brought in in 1996 as an artificial method of reducing waste landfilled for environmental purposes and to assist the UK to meet the requirements of the Landfill Directive. It is currently £64/t and the Government has stated that it will increase to £80 by 2014/15 and this will form a minimum baseline with further review planned. For Devon, the landfill tax paid on household waste has increased per tonne, but with reducing quantities of waste being landfilled the landfill tax bill is growing more slowly. Nevertheless, it is still a significant element of the costs in Devon.

	Tonnes landfilled	Landfill tax	Cost
2008/09	188,397	£32	£6.0 M
2009/10	180,152	£40	£7.2 M
2010/11	170,860	£48	£8.2 M
2011/12	158,558	£56	£8.9 M

The County Council is obliged by law to pay recycling credits to the District Councils (and to community groups on a discretionary basis) for every tonne of waste they arrange to have recycled. The current rate is £50/tonne representing the saving in the cost of landfill to the County Council. The total amount paid was £3.291M in 2011/12 (£50 x 65,812t). However, that represents a saving to the County Council of approximately £39/t, i.e. landfill cost/t (approx £89/t including lft) minus the recycling credit.

Each year, approximately £200,000 of the value of the recycling credits is “topsliced” to fund joint initiatives through the Devon Authorities Waste Reduction and Recycling Committee.

Cost of different waste management operations

The unit cost/tonne of waste dealt with depends on how it is treated. Current surveys show the average costs for 20010/11 as follows:-

	UK Median	UK Range
Landfill	20 (84 inc. lft)	12 – 55 (68-111 inc lft)
Compost	24	6 – 51
IVC	43	29 – 82
AD	43	36 – 64
EfW	73	54 – 97
MBT	84	57 – 100

Appendix 4

Carbon

The Climate Change Act 2008 requires the Government to reduce greenhouse gas emissions by at least 34% by 2020, and 80% by 2050, below the 1990 baseline, as well as setting five yearly carbon budgets.

The waste sector accounts for approximately 3% of all UK emissions including methane from landfill. However, preventing food waste, for example, avoids emissions associated with farming and the manufacture, transport, cooking and disposal of food and recycling materials reduces emissions and other impacts of raw materials and waste disposal. Waste can also be used to produce renewable energy, reducing the demand for energy from fossil fuels and contributing to the UK's renewable energy target of 15% by 2020.

Although there are other impacts, carbon generally acts as a good proxy for the overall impacts of waste and the higher up the waste hierarchy waste is treated, the smaller the greenhouse gas impacts. The government has aimed to factor in carbon impact when making its policy choices, hence looking at waste streams with high carbon impacts such as food, metals, plastics, textiles, paper, card and wood.

The Government is encouraging the measurement and reporting of waste management in carbon terms as an alternative to weight based measures. The Scottish Government has produced guidance on the introduction of a Carbon Metric Reporting System for Recycling Performance. The Scottish Carbon Metric System is intended to inform waste policy and to promote reduction in the environmental impact of resource use. It is designed as a decision making tool to prioritise the prevention, reuse and recycling of waste with the highest environmental benefit. High carbon impact materials can then be targeted for prevention, reuse or recycling.

The system is based on lifecycle thinking using CO₂ equivalent emissions savings made from the recovery of secondary resources from the waste stream and the displacement of the primary alternative.

A preliminary analysis of the Devon dustbin and materials recycling by weight and by using the carbon metric tool shows a different order of priorities emerging. The following table shows a comparison of nine materials and their order of significance in terms of weight versus carbon impact:-

	Weight	Carbon
1	Food	Plastic
2	Plastic	Textiles
3	Paper	Food
4	Garden	Metal
5	Textiles	Paper
6	Metals	WEEE
7	Glass	Glass
8	Wood	Garden
9	WEEE	Wood

Statutory European targets remain weight based so calculating recycling rates on this basis cannot be abandoned. This indicates that current levels of recycling in Devon needs to be maintained but that further materials capture should be focussed on those with the greatest carbon impact.

Further work will be carried out with the aim of reporting Devon's waste management carbon metric for reduction, reuse and recycling performance and potentially setting carbon based targets.

Alongside looking at the carbon impact of Devon's waste management is a proposal to develop an Energy Descent Plan. This is a guide to reducing our dependence on fossil fuels and reducing our carbon footprint over the next 20 years of the strategy during which there will be many changes associated with declining oil supplies and some of the impacts of climate change becoming more apparent. Concepts of resilience and localisation need to be explored, and linked with the move towards a more circular economy where waste is used as a resource to make more products/energy and not simply disposed of as in a linear economy.



Appendix 5

Links to Local Authority websites

For further information on waste management at the Devon Local Authorities follow the links below:

Devon County Council	www.devon.gov.uk
East Devon Council	www.eastdevon.gov.uk
Exeter City Council	www.exeter.gov.uk
Mid Devon Council	www.middevon.gov.uk
North Devon Council	www.northdevon.gov.uk
Teignbridge District Council	www.teignbridge.gov.uk
Torridge District Council	www.torridge.gov.uk
South Hams District Council	www.southhams.gov.uk
West Devon Borough Council	www.westdevon.gov.uk
Plymouth Council	www.plymouth.gov.uk
Torbay Council	www.torbay.gov.uk

Appendix 6

Material category	District Kerbside	Material category									
		Paper		Metal		Plastic		'Tex'		FW/GW	
Other	Residual	2	2	2	2	2	2	1	2	1	2
	Spectacles										1
	Cooking oil										1
	Engine oil										1
	Car batteries										1
	Mobile phones						2				1
Paper	Garden Waste	3	2	2	2	2	2	2	2	2	
	Food Waste	1		2	2	2	2	2	1		1
	Printer cartridges						2				1
	Household batteries	1		2			2		1		1
	Cardboard drinks cartons			2							1
	Shoes			2	1		2	1			1
Plastic	Textiles	1		2	1		2	1	1		1
	Plastic bags		2	2							
	Mixed plastic containers		2							2	1
	PET Plastic bottles	1	2		1	2	2	1	1	2	1
	HDPE Plastic bottles	1	2	2	1	2	2	1	1	2	1
	Foil	1	2	2	1	2		1		2	1
Metal	Aerosols	1	2		1	2	2	1	1	2	1
	Tins & cans	1	2	2	1	2	2	1	1	2	1
	Glass bottles & Jars	1		2	1		2	1	1		1
	Greetings cards		2	2	1	2	2	1	1	2	1
	Corrugated cardboard		2	2	1	2		1	2	2	1
	Thin cardboard		2	2	1	2	2	1	1	2	1
Paper	Yellow pages	1	2	2	1	2	2	1	1	2	1
	Directories	1	2	2	1	2	2	1	1	2	1
	Catalogues	1	2	2	1	2	2	1	1	2	1
	Shredded paper	1		2	1	2	2	1	1		1
	Coloured Paper	1		2		2	2	1	1	2	1
	Office Paper	1	2	2	1	2	2	1	1	2	1
Material category	Envelopes	1	2	2	1	2	2	1	1	2	1
	Junk Mail	1	2	2	1	2	2	1	1	2	1
	Magazines	1	2	2	1	2	2	1	1	2	1
	Newspapers	1	2	2	1	2	2	1	1	2	1
	% coverage (organic)	99%	99%	80%	99%	83%	99%	62%	100%	93%	92%
	'District Kerbside	99%	99%	100%	99%	100%	99%	99%	100%	100%	100%
Material category	District Kerbside	East Devon Frequency	Exeter Frequency	Mid Devon Frequency	North Devon Frequency	South Hams Frequency	Teignbridge Frequency	Torridge Frequency	West Devon Frequency	Plymouth Frequency	Torbay Frequency

Key

- || Container type - Box
- || Container type - Wheeled Bin
- || Container type - Sack / Bag
- || Container type - Food waste caddy
- || Container type - Other

Container colour

- || Collection container colour - Green
- || Collection container colour - Black
- || Collection container colour - Brown
- || Collection container colour - Blue
- || Collection container colour - Other

Collection frequency

- 1 Collection - Weekly Collection frequency
- 2 Collection frequency - Fortnightly
- 3 Collection frequency - Other

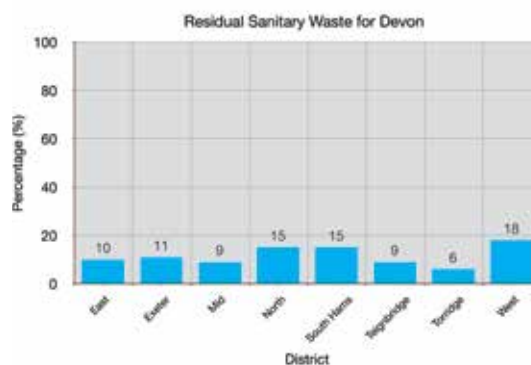
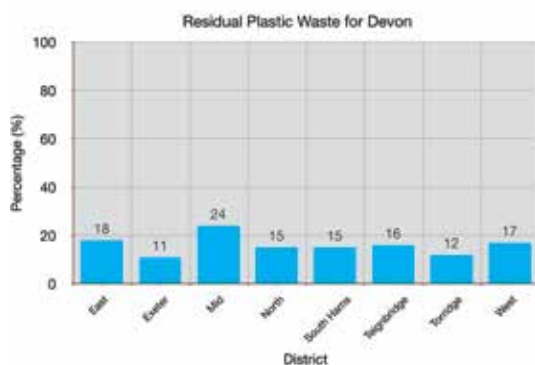
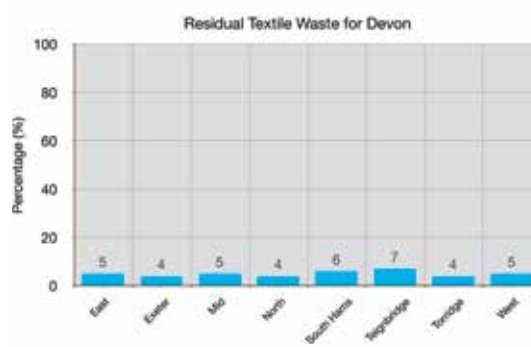
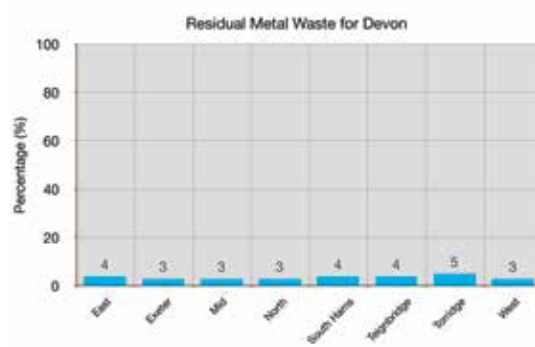
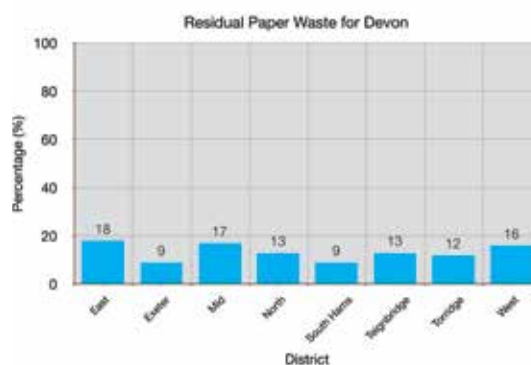
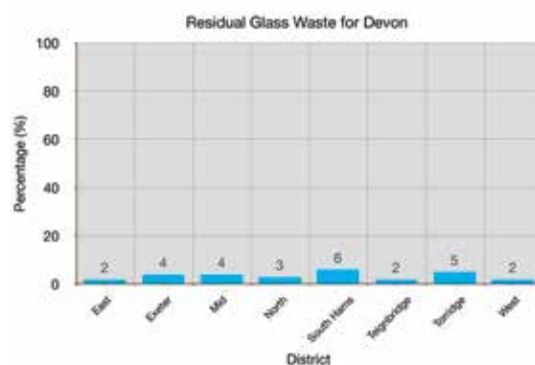
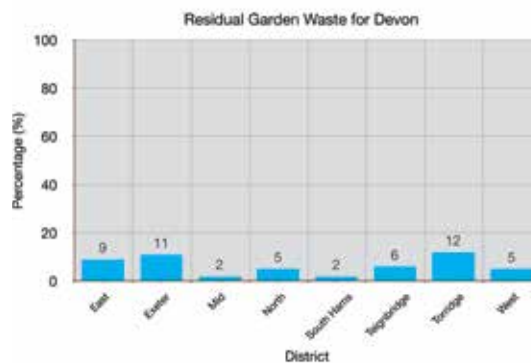
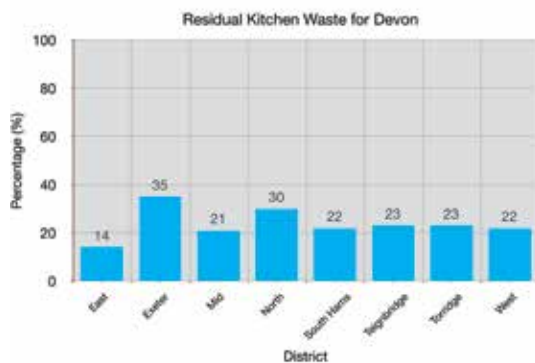
Notes

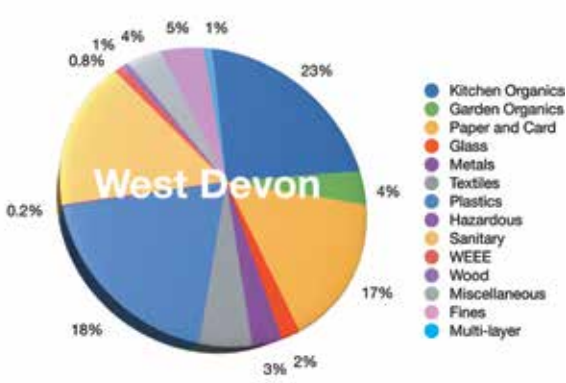
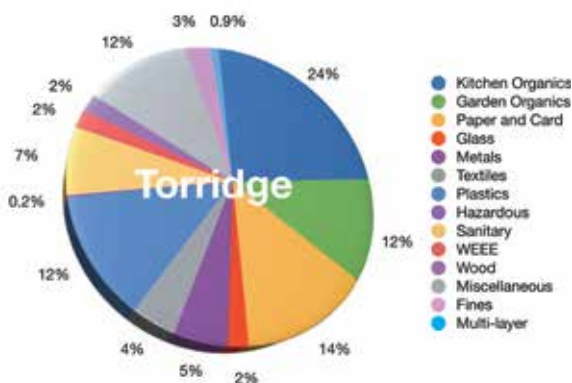
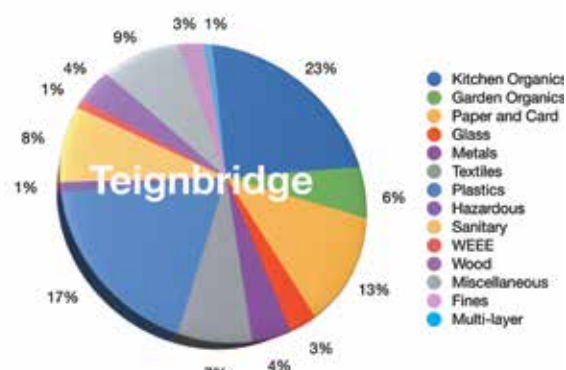
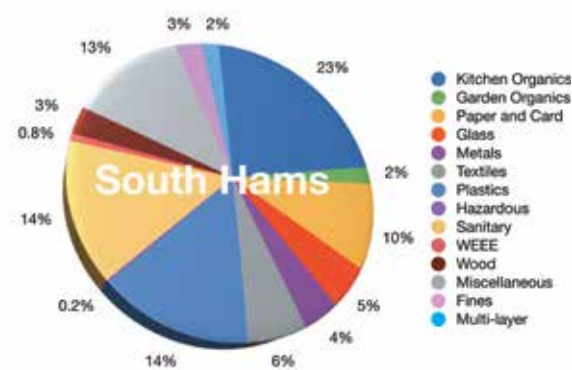
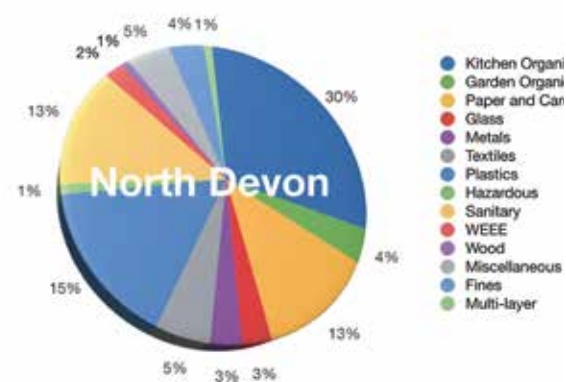
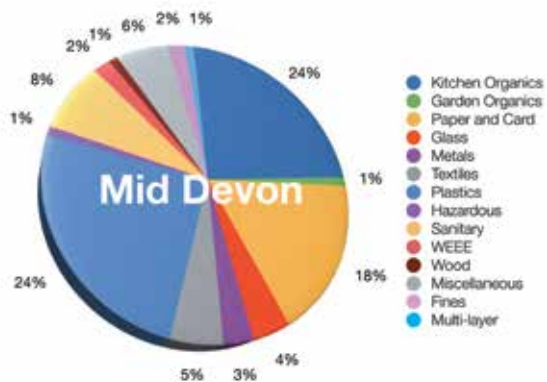
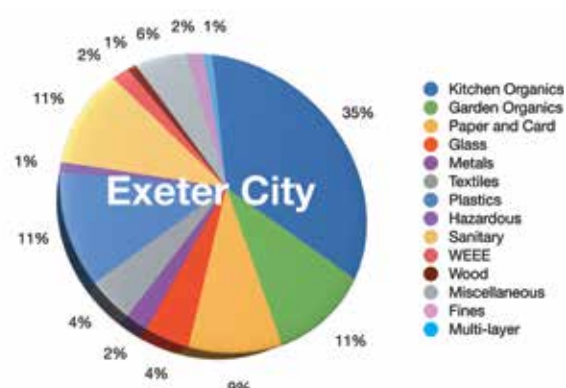
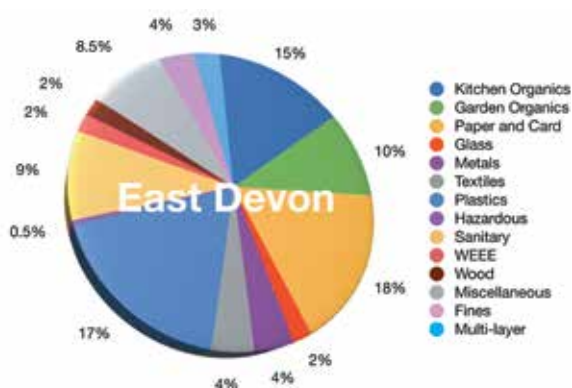
This summary illustrates the majority view. Collections may vary between households to that shown. Contact your local authority for specific details by household

Appendix 7

Results of 2012 Devon household waste analysis

An analysis was carried out in March 2012 to determine the contents of the residual waste bins from 1600 households across Devon. The Devon dustbin is set out in Chapter 8 in the main document. Extracts from the final report are detailed below.





Appendix 8

Strategy Policies

Policy Statements

WSPS1

This Strategy will form the framework for the management of Local Authorities Collected Waste within the administrative area of Devon over the period to 2035.

WSPS2

This Strategy will be reviewed and updated at least every five years to incorporate changes in waste management legislation, best practice policy and guidance, as well as reviewing waste generation forecasts and monitoring performance against targets. The Action Plan will be reviewed annually.

The Local Authorities will consider the need to support research projects locally into particular aspects of waste management.

WSPS3

Decisions about waste management will, in broad terms, be based on the hierarchy of Prevention, Preparing for reuse, Recycling, Other recovery, Disposal.

The overall aim is to increase the proportion of waste which is managed by options towards the top of the hierarchy. However, there may be a different order of options for particular wastes streams depending on environmental, economic or other factors involved.

WSPS4

The objectives of this Strategy are:-

1. The reduction of growth of municipal waste that is generated and to set a target for reducing the growth rate in household waste.
2. To provide a framework to ensure the development of facilities for the collection, treatment and disposal of waste in Devon which would enable it to become as self sufficient as possible. This would not prohibit the transport of waste between Devon and the adjacent Authorities and further afield where this would be economically and environmentally beneficial.

3. The beneficial use of as much household waste as possible through (in order of priority) materials recycling, composting and maximising the recovery of resources and energy, i.e, follow the waste management hierarchy wherever possible.
4. The recycling/composting of at least 60% of household waste by the year 2014/15 within Devon, and 65% by 2025/26.
5. The recovery of value (including recycling and composting) from 90% of local authority collected waste by 2015 and 95% by 2020.
6. To comply with the requirements of the EU Landfill Directive, including the meeting of targets to divert

Biodegradable municipal waste away from landfill.

- By 2013 to reduce the amount of biodegradable municipal waste landfilled to 50% of that produced in 1995.
 - By 2020 to reduce the amount of biodegradable municipal waste landfilled to 35% of that produced in 1995.
7. To choose an integrated mix of waste management methods with regard to managing waste as close to its source of generation (the Proximity Principle) which represents the optimum balance of environmental and economic costs and benefits, and minimise the risks of immediate and future environmental pollution and harm to human health.

WSPS5

Waste collection and disposal authorities and the community sector will maximise the potential to work together in order to:-

- Increase the efficiency of the waste collection service.
- Increase cost effectiveness.
- Maximise the re-use or recycling of bulky household waste collected directly from the householders.
- Tailor local services to local needs.

WSPS5 – Cont:

This will include the consideration of joint collection contracts, shared use of facilities and cross traditional boundary operations where mutual benefits would accrue. Harmonisation of collected materials and methods of collection will be researched and implemented if economically and environmentally beneficial to authorities and their customers. This process will require fully committed buy in from all authorities to ensure successful delivery.

WSPS6

The Local Authorities and the Environment Agency will continue to seek partnerships with appropriate sectors of the community and waste industry in order to promote waste reduction, reuse, recycling and composting and recovery of materials and energy across Devon.

The Local Authorities will look to the future and work more closely with the waste management industry and re-processors to secure long term partnerships and to develop local reprocessors where possible.

WSPS7

A reduction in waste growth is the core of this strategy. The aim is to maintain waste growth per household at zero or below.

Local Authorities will work together with the community sector, householders, business and industry to strive towards producing the minimum amount of waste with a regular review of the reduction in waste growth target.

The Local Authorities will work together to initiate, promote and support high profile waste minimisation behavioural change and education campaigns. They will work in partnership with other organisations, agencies, businesses and the community sector to achieve a lasting reduction in household waste.

WSPS8

Local Authorities will work together to encourage, promote and support the re-use of goods, items and materials. In conjunction with stakeholders and the community sector, a re-use strategy will be developed to:-

- Maximise opportunities for re-use and repair.
- Stimulate markets for re-use and seek new markets.

- Pump prime reuse initiatives through selective discretionary payment and re-use credits.
- Develop reuse indicators.
- Look at ways of increasing the range of reusable items and materials including in kerbside recycling collections.
- Help facilitate reuse partnerships between LAs, the community, voluntary and charity sectors.
- Encourage businesses to donate their unwanted working WEEE to charity as part of driving down waste produced in Devon.

LAs will support the establishment of facilities to enable goods and materials to be re-used, repaired and exchanged.

WSPS9

Each household will continue to have access to a comprehensive network of recycling facilities including the County Council Recycling Centres and a kerbside collection of dry recyclables.

Householders will be encouraged by education campaigns to separate their waste for recycling. The Local Authorities (who do not already) will also consider limiting the residue dustbin collection either by the size of receptacle provided or frequency of collection or both, thereby encouraging the householder to minimise the waste that they produce and maximise the amount of material that they sort out for recycling.

The Local Authorities will strive to meet recycling and composting targets set for, the following years:-

- Recycling and composting of 60% of household waste by 2014/15.
- Recycling and composting of 65% of household waste by 2025/26.

Achievement of these targets will depend on the best balance from the following list of considerations:-

1. The existence of a sustainable market for the collected materials and the development of local markets for recycled materials and hence employment.
2. The likely participation in recycling schemes and the level of contribution.

WSPS9 – Cont:

3. The environmental impacts of the process.
4. The cost compared to other methods of waste management.

The Local Authority Planning Services will seek to ensure by means of planning guidance and conditions that new developments including highway infrastructure will incorporate appropriate space to facilitate recycling both in terms of house and garden space and highway access for waste collection vehicles.

The Local Authorities will implement a communication strategy to ensure householders are kept informed of how, where, when and why to recycle and about other aspects of waste management.

The LAs will lobby central government by appropriate means to guide, support and fund waste management waste prevention, reuse and education to an appropriate level.

WSPS10

The Local Authorities will seek to optimise potential for appropriately sized composting facilities including Anaerobic Digestion within the controls of current legislation and policy.

They will work with other organisations to find composting methods which produce a useful and marketable product from household, commercial and industrial wastes.

WSPS11

The Local Authorities will support increased participation in home composting by a variety of means including bin sales, promotion and development of a network of “Compost Ambassadors”.

The target will be to increase the waste composted at home to 10% of the available organic waste by 2025.

WSPS12

The Local Authorities will support the pro-active development of community composting and schools composting by increasing resources to assist setting up new schemes and provide support for existing schemes.

WSPS13

The Local Authorities will seek opportunities to

co-compost municipal waste with commercial and industrial waste. E.g. Merchant AD plants

WSPS14

Recovery of value from all practicable waste including energy recovery facilities will play an important role in the long term management of municipal waste in Devon.

Appropriately sized facilities taking into account the potential reduction of residual wastes arising from well resourced education and communication strategies which follow the Proximity Principle will be preferred if economically viable and sustainable.

The Local Authorities will maintain an overview of the technologies available to determine an appropriate balance which may be appropriate for Devon.

WSPS15

Landfill will continue to be a method of managing a small percentage of Devon's waste from 2014.

In some parts of the County, the existing landfill capacity will be insufficient for the quantity of waste likely to be generated over the period and extensions to existing landfill sites or new capacity will be required to meet that need.

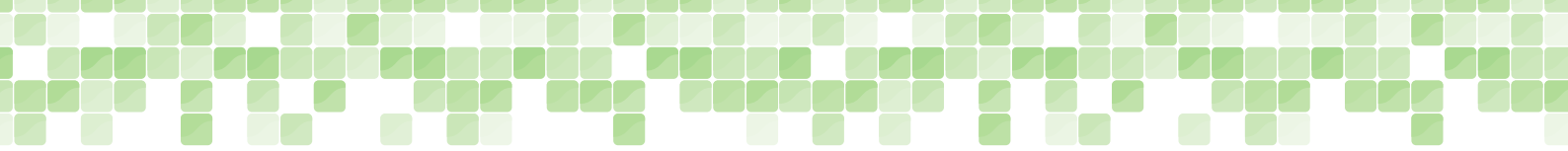
In the long term landfill will, as part of this Strategy, be used only for those wastes which cannot be recycled, composted or recovered and the residues/rejects from these processes. The aim will be to drive down the waste arising that requires this method of disposal.

WSPS16

The Local Authorities will work together to contribute to the UK's obligations under the Landfill Directive i.e. to achieve the targets set out for the reduction of biodegradable municipal waste being sent to landfill in 2013 and 2020. This will be achieved by promoting waste reduction, meeting or exceeding the Strategy recycling and composting targets, and some form of energy and materials recovery.

WSPS17

The Local Authorities will work together to discourage the abandonment of vehicles and to ensure that vehicles once abandoned are treated in full compliance with the end of life vehicles regulations whilst still providing best value.



WSPS18

The Local Authorities will work together to implement the requirements of the WEEE Directive. They will request that the Government ensures that no extra cost burden will fall to local authorities as a result of any proposed changes to the WEEE regulations.

WSPS19

The Devon Local Authorities will seek to support Producer responsibility schemes which evolve from EU Directives as appropriate. The Local Authorities will comply with the revised Waste Framework Directive through Government transposition document (The Waste Regulations 2011).

WSPS20

The Local Authorities will work with the Environment Agency to reduce the amount of fly tipped waste by the publicising of the environmental damage and subsequent costs of clearance of fly tipped waste, as well as improved enforcement and subsequent numbers of prosecutions.

WSPS21

The Local Authorities will work together with the waste management industry to investigate alternative forms of transporting waste both within and outside of the County, taking account of both the environmental and economic factors.

WSPS22

The Local Authorities will take steps to ensure that waste produced by their own organisations is kept to a minimum and recycling opportunities are maximised. A level of service equal to that provided for householders should be made available. Similarly, they will seek to apply sustainable procurement strategies.

Appendix 9

District and Unitary Councils' achievements since 2005

East Devon

1. Contract let to Sita April 2006 initially until March 31st 2013 but now extended to 31st March 2016
2. 2006 recycling collections for all
3. 2008 commenced roll out of new waste and recycling scheme – completed November 2010
 - (a) Introduction of 180 litre wheeled bins or 'gull' sacks for residual waste (larger 240 litre for larger households – 5 or more or in specific circumstances – collected fortnightly)
 - (b) Collection of recyclables – weekly
 - (c) Additional collection - food waste – majority going to AD
 - (d) Additional - plastic bottles
 - (e) Recycling increased from 19.36% to 48.6% since 2006/07
 - (f) Waste to landfill reduced from 32,122t in 2006/07 to 22,020t in 2010/11
4. Introduced in April 2011 garden waste collection service with Third Sector partner - Otter Rotters who are rolling out the service throughout the district
5. Some waste & recycling collections in small areas shared with other authorities – Mid Devon and Exeter City
6. Change of waste disposal point for some waste – original to Exeter Transfer Station now to Greendale Transfer site
7. Home composting scheme with Original Organics
8. Worked jointly with other WCAs on paper (Aylesford Newsprint) and glass(Rescresco) reprocessing outlet and transport to those facilities.
9. Joint contract with other districts for sale of textiles (Wilcox)

Considering options for kerbside cardboard and mixed plastics collections

Exeter

1. Introduced a Trade Waste Recycling Service in 2009
2. Revised our free Saturday bulky waste collections - reduced from 25 to 14 - concentrating on sites where collections are >10 tonnes (this is subject to possible further reductions where sites are close to the Pinhoe Recycling Centre)
3. From September 2011 street collected leaves are now sent for composting to Glendale (Ecosci) at Hill Barton due to the introduction of the revised

Environmental Permitting regulations 2010 which resulted in the closure of our in-house composting facility at Water Lane.

4. Domestic collections of refuse and recycling were reviewed and changes implemented in September 2010 - this resulted in 13,000 properties moving from weekly to bi-weekly collections and the number of collection crews being reduced by one.
5. Streamlining of garden waste service is underway - all properties requiring the service will be required to register (the system of 'trawling' every road city wide has ceased)

Mid Devon

1. Reduced tonnes household waste to landfill from 25,200 to 16,200 tonnes
2. Extended the range of materials collected for recycling: food waste, garden waste, drink cartons, batteries, plastic milk bottles
3. Extended kerbside recycling coverage from 80% to 100% of households
4. Introduced recycling collections for businesses in the Tiverton and Cullompton areas of the district
5. Increased household recycling rate from less than 20% to 49%

North Devon

1. 2008 - May - Weekly kerbside collection of dry recycling, taken in house
2. 2009 - Rolled out new service in May to 5000 properties
 - a. Kerbside caddies for food waste, collected weekly with the dry recycling.
 - b. Brown bag for flattened cardboard, also taken with the dry recycling.
3. 2009 - October the rest of the district were issued with
 - a. Brown bag for flattened cardboard.
 - b. Food waste collected fortnightly in green wheelie bins.
4. 2008 Cardboard recycling collection offered to Trade customers
5. 2011 - August - 'No side waste for residual waste' trial in Braunton

South Hams

1. Expansion of kerbside recycling to 100% of District
2. AWC introduced
3. Organic waste collections introduced to 80% of district

4. Wheeled bins introduced to 80% of district
5. Introduction of commercial recycling and food waste collections to limited areas
6. 55% + recycling rate
7. Shared management structure for Environment Services with West Devon.

Teignbridge

1. Collection of all types of plastic bottles kerbside
2. Collections of textiles kerbside
3. Collections of batteries, print cartridges and mobile phones kerbside
4. Introduction of mixed plastics bring banks (Pots Tubs and Trays)
5. Introduction of cardboard bring banks
6. Bulky Waste Collection Initiative with ReFurnish Devon to maximise reuse
7. Top 10 National Recycling Rate Performance 2005 to 2010
8. Provision of on street recycling in tourist areas and Newton Abbot Town Centre
9. Increased recycling performance of Rural Skip Service
10. Introduction of Real Nappy scheme with discounts

Torridge

1. 2005 – Introduction of a second organic collection round doubling the size of the service
2. 2007 – Renegotiated the Dry Recycling Contract with South Molton Recycle to increase performance and reduce cost
3. 2008 Introduction of a third organic collection round expanding the service to cover approx 60% of district
4. 2008 – ongoing – Organic services continues to be expanded now approximately 65% of all properties provided with the service
5. 2010 Food waste included into the organic collection service
6. 2011 Complete remodel of all residual collection rounds. Total number of rounds reduced by 1 (from seven to six)
7. 2007 -2011 – Introduction of on street recycling points in all major towns
8. 2008 – 2011 – Schools recycling service rolled out to all schools wishing to participate
9. 2009-2011 – Torridge go public! Attendance at all district wide agricultural shows including North Devon Show, to promote waste, recycling and composting

10. 2010 – Commence procurement process for dry recycling contract due to commence 2012

West Devon

1. Introduced garden waste collection scheme
2. Introduced food waste collection scheme
3. Introduced banks for plastic bottles
4. Comprehensive waste education programme launched including appointing dedicated education officer
5. New contract let in April 2010 allowed weekly collection of 9 items of dry recycling along with food waste, and AWC of garden and residual waste to all households in borough.

Torbay

1. Recycling rate in 2005 25.61% and currently 45% additional 9% gained since TOR2 started collections in Sept 2010.
2. May Gurney agree to form Joint Venture Company with Torbay Council Feb 2010
3. TOR2 start kerbside sort of dry recyclables and separate food waste 6/9/10 to all households
4. HWRC £500k upgrade officially opened 24/6/11 offering more material recycling

Plymouth

1. Plymouth's recycling rate in 2005 was 16.5%. In 2010/11 it was 32.9%
2. The Council's Municipal Waste Management Strategy was adopted in April 2007.
3. Both the Household Waste Recycling Centres (HWRC) have been upgraded and the recycling rates have improved. Both sites have vehicle number plate recognition systems installed.
4. Garden waste collections have been introduced across the city to all appropriate households.
5. The collection vehicle fleet have been replaced with modern fuel efficient vehicles. CCTV cameras are fitted to the latest vehicles to improve safety and reduce insurance claims.
6. Plymouth will be hosting the new Energy-from-Waste facility on behalf of the South West Devon Waste partnership (SWDWP) offering a cost effective and efficient sub-regional solution for residual waste.
7. Plymouth will be introducing a trial kerbside glass collection from September 2012.
8. Plymouth will be seeking to replace the aging Materials Recovery Facility during 2012/13.

Appendix 10

EU Legislation

Landfill Directive (1999/31/EC)

This Directive;

Aims to prevent or reduce the adverse effects of the landfill of wastes on the environment.

Targets;

Reduce the amount of biodegradable waste sent to landfill (UK) by;

25% by 2010
50% by 2013
75% by 2020

Targets include a four year derogation which applied to countries landfilling more than 80% of waste when the legislation was introduced.

Implications

This Directive;

Restricts the types of waste that can be landfilled such as liquid wastes, hospital or clinical wastes, and used tyres.

Categorises landfills as either hazardous, non hazardous or inert.

Introduces waste acceptance criteria (WAC) to landfills and **pre treatment** requirements for certain waste types.

Sets up a system of operating **permits**, including management, monitoring and pollution prevention control measures.

Waste Framework Directive (2008/98/EC)

This Directive;

Aims to protect the environment and human health through the prevention of harmful effects of waste generation and waste management.

Targets;

Household Waste:
50% by weight recycled by 2020.

Construction and Demolition Waste:
70% by weight recycled by 2020.

These targets relate to Member States specifically.

This Directive;

Reinforces the **Waste Hierarchy** as;

- 1) *Prevention*,
- 2) *Preparing for reuse*
- 3) *Recycling*
- 4) *Other Recovery (i.e. Energy Recovery)*
- 5) *Disposal*

Introduces changes to **Duty of Care** to ensure that the Waste Hierarchy has been addressed for waste carriers, dealers or brokers.

Requires Member States to draw up a **Waste Prevention Programme** by December 2013.

Extends **producer responsibility** obligations with an emphasis on better design, manufacture and 'design for disassembly'.

Requires Member States to facilitate the creation of **reuse** and **repair** networks and other reuse initiatives.

Requires the **separate** (recycling) collection of paper, metal, plastic and glass where practicable.

Member States must encourage the separate collection and recovery of **bio waste**, and the use of resulting compost.

Implications

Establishes proposals for further specific **end of waste criteria** for streams including; aggregates, paper, glass, metal, tyres and textiles.

Note: In the UK, specific **end of waste** criteria are already adopted (i.e. compost), or under development (i.e. wood).

Excludes the reprocessing of materials used for fuels from recycling definition.

Incineration with energy recovery is now classed as **recovery** rather than disposal.

Repeals the **Hazardous Waste Directive** and part of the **Waste Oils Directive**.

WEEE Directive (2002/95/EC)

This Directive;

Aims to prevent Waste Electrical and Electronic Equipment and in addition; to encourage reuse, recycling and other forms of recovery of such wastes to avoid disposal.

Targets;

Producer responsibility targets have been set for all categories of WEEE noted in the implications column. Targets for household appliances are shown below;

Minimum annual **recovery** targets;
80% - Large household appliances
70% - Small household appliances

Minimum annual **recycling** and **reuse** targets;
75% - Large household appliances
50% - Small household appliances

Annual targets for the collection of WEEE (per person) were scrapped following 2008 revisions to the Directive.

This Directive;

Identifies the following categories of electrical and electronic equipment as WEEE;

- Large and small household appliances
- IT and telecommunications equipment;
- Consumer equipment;
- Lighting equipment;
- Electrical and electronic tools (with the exception of large-scale stationary industrial tools);
- Toys, leisure and sports equipment;
- Medical devices (with the exception of implanted and infected products);
- Monitoring and control instruments;
- Automatic dispensers

Member states are to encourage the design and production of electrical and electronic equipment to facilitate dismantling and recovery.

Producers must mark new E&E equipment with a **crossed out wheeled bin**.

Producers, manufacturers and importers are **responsible** for the collection, treatment and reprocessing of WEEE.

Member states to facilitate the **separate collection** of WEEE through disposal points and take back schemes.

Retailers must provide customers with information about recycling or provide take back schemes where an equivalent new item is purchased.

Consumers do not have any **legal duties** under the WEEE regulations.

Batteries Directive (2006/66/EC)

This Directive;

Prohibits certain batteries from the market place where they contain a certain mercury or cadmium content, and establishes rules for the collection, recycling, treatment and disposal of batteries and accumulators.

Targets;

EU Targets for Member States;

Must achieve a collection rate for portable batteries of;

25% by 2012

45% by 2016

A recycling rate (for collected batteries) of between 50% - 75% depending on the type.

UK targets (collection);

10% by 2010

18% by 2011

25% by 2012 (as EU target)

Implications

This Directive;

1) Divides batteries into three categories; (industrial, automotive and portable -consumer)

2) **Restricts** mercury and cadmium levels in new batteries

3) Sets **collection targets** for portable batteries.

In the UK this Directive is delivered through two central Regulations;

1) **Batteries & Accumulators (Placing on the Market) Regulations 2008** bans the sale of batteries that do not meet the EU Directive. This includes restricting the amount of hazardous substances in batteries, in particular, mercury, cadmium and lead, and restricting the sale of appliances which do not facilitate the removal of batteries.

All batteries must be labelled with the crossed out wheeled bin symbol.

2) The **Waste Batteries and Accumulators Regulations 2009** establishes producer responsibility obligations to fund the collection and recovery of waste batteries.

Under these Regulations, Retailers selling portable batteries must take back waste batteries from consumers free of charge.

From 2010, industrial and automotive batteries were banned from landfill or incineration. Producers of these types are now responsible for their collection and recycling.

Waste Incineration Directive (2000/76/EC)

This Directive;

Aims to prevent or reduce, air, water and soil pollution, as well as any risk to human health, resulting from the incineration of waste.

Targets;

This Directive does not contain a specific target but does impose operating and emissions limits.

This Directive;

Introduces strict operating conditions and technical requirements on waste incineration plants.

Ensures that all plants will be permitted for specified waste types and volumes.

Monitors operating procedures, air and water emissions and residues.

Ensures plant performance data is made available to the public.

Heat generated must be put to good use as far as possible.

Packaging & Packaging Waste Directive (1994/62/EC)

This Directive;

Aims to limit the production of packaging waste and promote reuse, recycling and recovery regardless of origin i.e. households, commercial or industrial.

Targets;

By 2008,
Between 55% & 80% by weight of packaging recycled of which;

60% - Glass paper and board
50% - Metals
22.5% - Plastics
15% - Wood

Implications

This Directive;

Sets material specific targets for all packaging placed on the European market.

In the UK this is implemented through the **Producer Responsibility Obligations (packaging waste) Regulations 2007** (SI 2849)

Under these regulations, packaging must meet certain requirements to limit its weight and volume, reduce its hazardous nature and be designed for reuse or recovery.

Packaging must also be marked to identify its type to facilitate subsequent recycling.

Incineration 'with recovery' contributes to achieving these targets.

UK Legislation Environmental Protection Act 1990

This act;

Represents the cornerstone of UK Environmental legislation. It identifies the scope and responsibilities of authorities for a broad range of Environmental topics, not all of which relevant to waste management.

Targets;

No targets are contained within this act.

Implications

This act;

- Aims to control pollution including to air, land and sea.
- Identifies the roles and responsibilities of regulatory and other authorities (including local authorities)
- Sets out a regime for regulating and licensing controlled waste (which includes household, commercial and industrial).
- Establishes Duty of Care and outlines provisions relating to litter, fly tipping and enforcement of environmental crime.

The EPA is an evolving Act which incorporates changes introduced through EU policy (such as the Waste Framework Directive), or changes to National policy through other relevant acts.

The following summary identifies key waste related changes to the EPA and their enabling acts;

Household Waste Recycling Act 2003

This act established that English Waste Collection Authorities must arrange for the separate collection of two recyclables from all households by 2010.

The act also introduced a requirement to report **waste data** against any performance indicators and to monitor progress toward meeting the separate collection requirement above.

Implications

Clean Neighbourhoods and Environment Act 2005

This act updates aspects of the EPA, including vehicles, litter and refuse, environmental nuisance (e.g. graffiti, dogs, noise) and the Recycling Credits Scheme.

The act includes additional measures to control **fly tipping** including tougher penalties and the power for authorities to serve notice on private landowners to clear land where fly tipping has occurred.

Climate Change Act 2008

This Act enables authorities to develop waste reduction schemes through incentives. This scheme can only operate where the authority provides a good recycling service and could target increased recycling or reduced residue.

Controlled Waste Regulations 2012

These Regulations;

- 1) Identify sources of controlled waste as household, commercial or industrial waste.
- 2) Identify household wastes for which collection and disposal charges can be made.

Targets;

No targets are contained in these regulations.

These Regulations;

Update the 1992 Controlled Waste Regulations.

They remove the **duty** for Local Authorities to dispose of household waste from listed premises free of charge. This change allows charges to be made for such wastes from premises including hospitals and schools.

The Waste Regulations 2011

These Regulations:

Transpose the Waste Framework Directive 2008 into UK law.

Targets;

No direct targets are contained in these regulations however the separate collection of recyclate holds implications for Local Authorities.

These Regulations;

Introduce a statutory duty to take the **waste hierarchy** into account when making decisions about waste management options.

Establish that a National **Waste Prevention Programme** must be developed by 2013, and subsequently reviewed every six years. This plan aims to break the link between economic growth and the environmental impacts associated with the generation of waste.

Introduce a duty for authorities to separately collect paper, metal, plastic and glass by 2015. **(Clarification on the term 'separate collection' is currently under review - DEFRA)**

Amend aspects of **Duty of Care** including Waste Transfer notes and carrier registration. Waste Transfer notes now include a requirement to confirm that the Waste Hierarchy has been applied.

Environment Act 1995

This act;

Established the Environment Agency (and Scottish Environment Protection Agency) to integrate environmental management and control.

Targets:

No targets are contained in this Act.

Implications

This act;

Makes numerous amendments to the EPA in relation to powers and duties of the regulators.

Glossary of terminology

EU Regulations apply to all member states and do not need to be converted into national regulations. The aims and timescales are as stated in the original Regulations.

EU Directives are the most common type of EU legislation and set out the aims, minimum targets and timescales through articles. Directives allow the individual Nations to develop their own schemes to meet these outcomes within a specified time frame. Once National legislation has been established it supersedes the original EU Directive.

EU Decisions are specifically addressed toward particular Member States and may address a particular issue. EU Directives are implemented into UK law through primary and secondary legislation.

Acts (of Parliament) create the statute law and set out general requirements. Statutory Instruments including Orders, Regulations, Rules or Directives are often used to provide the detail.

Glossary of Waste Terms

Anaerobic Digestion (AD):	Bacterial decomposition of organic waste in anaerobic conditions to produce biogas, together with a compost-like residue which can potentially be used as a soil improver/fertiliser.
Biodegradable/organic:	Putrescible waste normally rich in organic material typically, food waste, garden waste, paper, and card which when landfilled degrade producing methane and carbon dioxide, powerful greenhouse gases.
Bulky Household Waste (BHW):	Large items of household waste such as furniture or fridges, together with garden and DIY waste.
Bulky plastics:	These are rigid items such as garden furniture, garden hoses, children's toys, crates, storage containers, hard plastic tubs, buckets, waterbutts and dustbins.
Calorific Value:	Measurement of energy recovery potential.
Commercial waste:	Waste from premises used mainly for the purposes of trade or business
Carbon Impact:	The total impact of greenhouse gases such as methane and carbon dioxide caused by a process, event, or product.
Combined Heat and Power (CHP):	Conversion of waste heat from an EfW facility for distribution as electricity and heat, typically for local district housing
Defra:	Department for Environment, Food and Rural Affairs
Devon Authorities:	Devon consists of 8 waste collection authorities 2 unitary authorities and one waste disposal authority. Only the collection authorities belong to the administrative area of Devon.
Devon Authorities Waste Reduction and Recycling Committee (DAWRRC):	An officer and councillor group set up in 1992 to promote and partially fund recycling projects in Devon. All Devon Local Authorities participate in this committee.
Dry recyclables:	Typically non food and garden waste such as plastic, cardboard, glass, textiles, metals, batteries, electronic goods and paper.
Economies of Scale:	Savings typically made due to carrying out something on a large scale thereby reducing costs such as overheads e.g. procuring 100,000 bins rather than 1000
Embedded Carbon:	Carbon impact of the production of goods, considered as if the carbon was embodied in the product itself
Energy from Waste (EfW):	A term for a range of technologies which produce energy in the form of heat, electricity or gas e.g. incineration with energy recovery, gasification, pyrolysis, anaerobic digestion.
Ezine:	An electronic newsletter
Gasification:	A process that converts waste, in the presence of air, at high temperature into a gas that is burned to generate heat energy.

Household waste:	Waste arising from domestic property which is solely for the purposes of living accommodation; a further detailed description can be found in the Controlled Waste Regulations 2011.
Household Waste Recycling Centre (HWRC):	Sites provided under the Environmental Protection Act 1990 where householders can take their Bulky Household Waste.
Industrial waste:	Waste generated by factories or industrial processes
In-vessel Composting (IVC):	An aerobic (i.e. in air) process whereby organic waste is turned into a useable compost.
Kerbside recycling:	Collection of recyclable materials from householders' 'doorsteps'
Landfill Directive:	A European Directive which limits what can be landfilled. See Appendix 10.
Landfill Tax:	An environmental tax to discourage the disposal of waste to landfill
Life Cycle Analysis (LCA):	An analysis of the input of materials and output of emissions relating to the whole life of a product from its manufacture and distribution through its use, re-use and maintenance, to its recycling and waste management.
Local Authority Collected Waste:	Local Authority Collected waste is all waste collected by or on behalf of a local authority
Mailing Preference Service (MPS):	A Junk Mail opt out service to reduce the amount of junk mail received by householders
Merchant plants:	Facilities built by private companies independently of local authorities.
Materials Reclamation Facility (MRF):	Industrial plant where mixed recyclables (or wastes) are sorted into their constituent parts, baled and prepared for transportation to market.
Mixed plastics:	Plastics of different grades and consistencies such as yoghurt pots, margarine tubs, cling film, tubs, bags and bottles (if not collected separately).
Municipal Solid Waste (MSW):	The common name given to the waste generated in a municipal area and collected by the Waste Collection Authority or its agents. This includes waste collected from households, beach cleansing and fly-tipped waste, as well as some commercial and industrial wastes.
PAS100:	This is a "Publicly Available Standard" for composting which specifies the standard a compost like material is required to meet in order for it not to be classified as a waste.
Pyrolysis:	The thermal decomposition in the absence of oxygen.
Recycling Credits:	Recycling credits are a sum of money paid by WDAs to WCAs for each tonne of waste recycled (i.e. disposal costs saved) which a statutory duty under the Environmental Protection Act (1990). Discretionary credits can be paid to 3rd parties such as community groups.
Redundant Landfill Sites:	Sites which no longer take waste and are required to be made safe and restored to their former use.
Renewable Heat Incentive (RHI):	The RHI provides support for community and district heating schemes where a single renewable heat system provides heat or hot water to more than one property.
Reuse Credits:	Reuse credits are sums of money paid to furniture and white goods reuse groups for avoiding landfill.
Transition Towns:	A ethical sustainability movement www.transitionnetwork.com which mainly focuses on mitigating against the impact of peak oil and climate change, encouraging people to be more self sustaining by, for example, practising permaculture, exchanging skills, volunteering, and growing your own fruit and vegetables.
Transfer Station:	Is a building or processing site for the temporary deposition of waste. Dustcarts discharge their waste which will then be loaded into larger vehicles. These larger vehicles will transport the waste to the end point of disposal e.g. landfill, recycling reprocessor or Energy from Waste facility.
Waste Collection Authority (WCA):	Arrangements for the collection of household waste are the responsibility of the District, Borough and City Councils, together with Torbay and Plymouth Unitary Authorities.
Waste Disposal Authority (WDA):	Arrangements for the final disposal of household waste are the responsibility of the County Council, together with Torbay and Plymouth Unitary Authorities.
Waste Hierarchy:	The placement of alternative methods of waste management in order of their predicted sustainability: Reduce, Prepare for Reuse, Recycle, Compost, Energy Recovery, Disposal to Landfill
WEEE:	Waste Electrical and Electronic Equipment. See Appendix 10
WFD:	The European Waste Framework Directive. See Appendix 10
WRAP:	The Waste and Resources Action Programme (www.wrap.org.uk) is funded by government to research sustainable waste management offering advice to people at home and at work, working with a wide range of partners including businesses and local authorities.

